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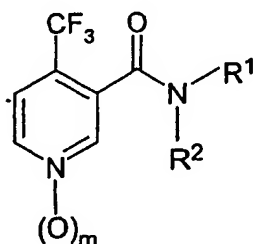
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(54) Title: **PYRIDINE CARBOXAMIDE DERIVATIVES AND THEIR USE AS PESTICIDES**



(57) Abstract: The invention relates to a 3-pyridylcarboxamide derivative of formula (I). Wherein the various symbols are as defined in the description, compositions thereof, their use for the control of pests, and to processes for their preparation.

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Description

PYRIDINE CARBOXAMIDE DERIVATIVES AND THEIR USE AS PESTICIDES

5 The invention relates to 3-pyridylcarboxamide derivatives and their use for the control of pests, in particular arthropods such as insects and acarids, and helminths (including nematodes); to compositions containing them, and to processes and intermediates for their preparation.

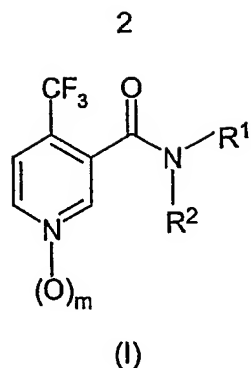
The control of insects, nematodes or helminths with 3-pyridylcarboxamide
10 compounds has been described in many patents such as EP 580374, JP 10101648, JP 10182625, WO 200109104, WO 200114340, JP 6321903, JP 10195072 and JP 11180957.

However, the level of action and/or duration of action of these prior-art compounds is
15 not entirely satisfactory in all fields of application, in particular against certain organisms or when low concentrations are applied.

Since modern pesticides must meet a wide range of demands, for example regarding level, duration and spectrum of action, use spectrum, toxicity, combination
20 with other active substances, combination with formulation auxiliaries or synthesis, and since the occurrence of resistances is possible, the development of such substances can never be regarded as concluded, and there is constantly a high demand for novel compounds which are advantageous over the known compounds, at least as far as some aspects are concerned.

25 It is an object of the present invention to provide compounds which widen the spectrum of the pesticides in various aspects.

The present invention provides a compound which is a 3-pyridylcarboxamide
30 derivative of formula (I):



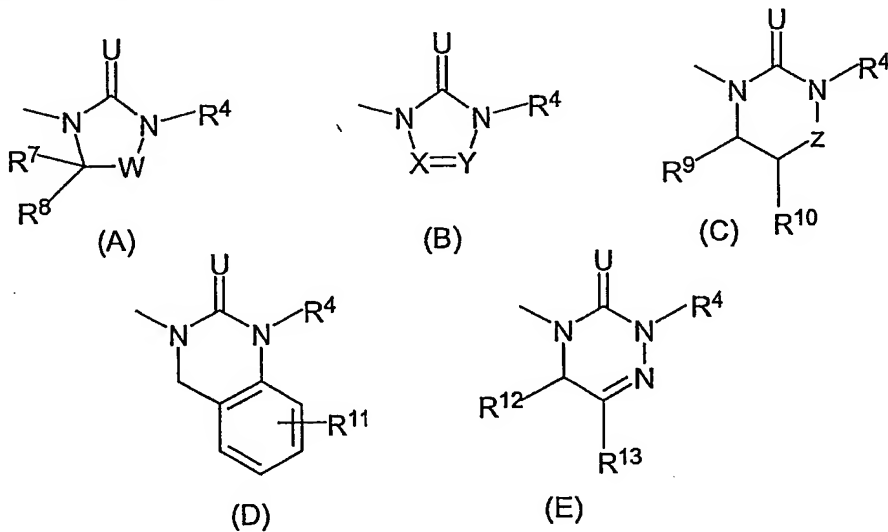
wherein:

R^1 is $-C(=U)NR^3R^4$ or $-C(=V)OR^{3a}$;

5 R^2 is H, (C_1-C_6) alkyl or R^3 ;

R^3 is R^5 , OH or NH_2 ; or is (C_1-C_6) alkyl substituted by one or more R^6 groups;

or R^2 and R^3 together with the interconnecting atoms form a heterocyclic ring selected from (A), (B), (C), (D) and (E);



- 10 R^{3a} is (C_3-C_8) cycloalkyl or (C_3-C_8) cycloalkyl- (C_1-C_6) alkyl, which cycloalkyl groups are unsubstituted or substituted by one or more (C_1-C_6) alkyl, (C_1-C_6) haloalkyl or R^6 groups; or is (C_1-C_6) alkyl, (C_3-C_6) alkenyl or (C_3-C_6) alkynyl which last three mentioned groups are substituted by one or more R^6 groups; or is (C_1-C_6) alkylamino; or is $NH(CHR^{14})_s$ aryl which aryl group is unsubstituted or substituted by one or more
- 15 R^6 groups;
- R^4 is H or R^5 ; or is (C_1-C_6) alkyl unsubstituted or substituted by one or more R^6 groups;

or R³ and R⁴ together with the adjacent N atom form a 3 to 8-membered unsaturated, partially saturated or saturated heterocyclic ring which optionally contains up to three additional N, O or S atoms and which ring is unsubstituted or substituted by one or more R⁶ or R^{14a} groups (preferred examples of such ring systems include pyrrolidin-1-yl, pyrrolin-1-yl, piperidin-1-yl, morpholin-1-yl (or its N-oxide), thiomorpholin-1-yl (or its S-oxide or S, S-dioxide), 4,5-dihydropyrazol-1-yl or pyrazol-1-yl);

R⁵ is (C₃-C₆)alkenyl, (C₃-C₆)alkynyl, (C₃-C₈)cycloalkyl, (C₁-C₆)alkoxy, (C₃-C₆)alkenyloxy, (C₃-C₆)alkynyloxy, (C₁-C₆)alkylamino, di-(C₁-C₆)alkylamino, CO(C₁-C₆)alkyl, NHCO(C₁-C₆)alkyl, NHSO₂(C₁-C₆)alkyl or SO₂(C₁-C₆)alkyl which last 12 mentioned groups are unsubstituted or substituted by one or more R⁶ groups; or is (C₃-C₈)cycloalkyl-(C₁-C₆)alkyl which cycloalkyl group is unsubstituted or substituted by one or more R⁶ groups; or is NH(CHR¹⁴)_saryl, -(CR¹⁵R¹⁶)_paryl, O(R¹⁵R¹⁶)_raryl, NHCOaryl, CO(CH₂)_taryl, NHSO₂aryl, SO₂(CH₂)_uaryl or N=C(aryl)₂, -(CR¹⁵R¹⁶)_pheterocyclyl or O(R¹⁵R¹⁶)_rheterocyclyl, which last ten mentioned aryl or heterocyclyl groups are unsubstituted or substituted by one or more R¹⁷ groups; or is O(CR¹⁵R¹⁶)_p(C₃-C₈)cycloalkyl or N=C[(C₁-C₆)alkyl]₂;

R⁶ is halogen, (C₁-C₆)alkoxy, (C₁-C₆)haloalkoxy, S(O)_nR^{14a}, CN, CO₂(C₁-C₆)alkyl, CO₂H, NO₂, OH, amino, (C₁-C₆)alkylamino, di-(C₁-C₆)alkylamino, carbamoyl, (C₁-C₆)-alkylcarbamoyl, di-(C₁-C₆)-alkylcarbamoyl or CH[O(C₁-C₆)alkyl]₂; or is phenoxy unsubstituted or substituted by one or more R^{14a} or halogen groups; R¹⁷ is R⁶, R^{14a} or CH₂OH;

U is S, O or NR¹⁸;

V is O or S;

W is (CHR¹⁹)_q, CO or NR²⁰;

X is CR²¹ or N;

Y is CR²² or N;

Z is O, CO or NR²³;

R⁷, R⁸, R⁹, R¹², R¹⁹, R²¹ and R²² are each independently H; or (C₁-C₆)alkyl,

(C₂-C₆)alkenyl, (C₂-C₆)alkynyl, (C₃-C₈)cycloalkyl, (C₁-C₆)alkoxy, (C₂-C₆)alkenyloxy or (C₂-C₆)alkynyloxy, which last seven mentioned groups are unsubstituted or substituted by one or more R⁶ groups; or is -(CH₂)_paryl or heterocyclyl, which aryl or

heterocyclyl groups are unsubstituted or substituted by one or more R^6 groups; or (C_3-C_8) cycloalkyl- (C_1-C_6) alkyl which cycloalkyl group is unsubstituted or substituted by one or more R^6 groups;

or R^7 and R^8 together with the attached carbon atom may represent $C=O$;

- 5 R^{10} , R^{20} and R^{23} are each independently H; or (C_1-C_6) alkyl, (C_3-C_6) alkenyl, (C_3-C_6) alkynyl or (C_3-C_8) cycloalkyl, which last four mentioned groups are unsubstituted or substituted by one or more R^6 groups; or is (C_3-C_8) cycloalkyl- (C_1-C_6) alkyl which cycloalkyl group is unsubstituted or substituted by one or more R^6 groups; or is $-(CH_2)_p$ aryl or heterocyclyl which aryl or heterocyclyl groups are unsubstituted or
- 10 substituted by one or more R^6 groups;

R^{11} is R^7 , halogen, CN, $CO_2(C_1-C_6)$ alkyl, NO_2 or $S(O)_nR^{14}$; or is (C_1-C_6) alkylamino or di- (C_1-C_6) alkylamino, which groups are unsubstituted or substituted by one or more R^6 groups;

R^{13} is R^7 or OH;

- 15 R^{14} , R^{15} and R^{16} are each independently H, (C_1-C_6) alkyl or (C_1-C_6) haloalkyl;

R^{14a} is (C_1-C_6) alkyl or (C_1-C_6) haloalkyl;

R^{18} is R^7 or OH; or is (C_1-C_6) alkylamino or di- (C_1-C_6) alkylamino, which groups are unsubstituted or substituted by one or more R^6 groups;

m is zero or one;

- 20 n, p, r, s, t and u are each independently zero, one or two;

q is one, two or three; and each heterocyclyl in the above mentioned radicals is independently a heterocyclic radical having 3 to 7 ring atoms and 1 to 4 hetero atoms selected from N, O and S;

or a pesticidally acceptable salt thereof;

- 25 with the exclusion of the compound wherein R^1 is $-C(=U)NR^3R^4$; U is O; R^2 is H; m is zero; R^4 is H and R^3 is 2,4-dichlorophenyl.

These compounds possess valuable pesticidal properties.

- 30 The invention also encompasses any stereoisomer, enantiomer or geometric isomer, and mixtures thereof.

By the term "pesticidally acceptable salts" is meant salts the cations or anions of which are known and accepted in the art for the formation of salts for pesticidal use.

Suitable salts with bases, e.g. formed by compounds of formula (I) containing a carboxy or OH group, include alkali metal (e.g. sodium and potassium), alkaline

- 5 earth metal (e.g. calcium and magnesium), ammonium and amine (e.g. diethanolamine, triethanolamine, octylamine, morpholine and dioctylmethylamine) salts. Suitable acid addition salts, e.g. formed by compounds of formula (I) containing an amino group, include salts with inorganic acids, for example hydrochlorides, sulphates, phosphates and nitrates and salts with organic acids for
- 10 example acetic acid.

The term pests means arthropod pests (including insects and acarids), and helminths (including nematodes).

- 15 In the present patent specification, including the accompanying claims, the aforementioned substituents have the following meanings:

halogen atom means fluorine, chlorine, bromine or iodine;

alkyl groups and portions thereof (unless otherwise defined) may be straight- or branched-chain;

- 20 cycloalkyl groups preferably have from three to six carbon atoms in the ring and are optionally substituted by halogen or alkyl.

The haloalkyl and haloalkoxy groups can bear one or more halogen atoms; preferred groups of this type include $-\text{CF}_3$ and $-\text{OCF}_3$.

- The term "halo" before the name of a radical means that this radical is partially or
- 25 completely halogenated, that is to say, substituted by F, Cl, Br, or I, in any combination, preferably by F or Cl.

The expression "(C₁-C₆)-alkyl" is to be understood as meaning an unbranched or branched hydrocarbon radical having 1, 2, 3, 4, 5 or 6 carbon atoms, such as, for example a methyl, ethyl, propyl, isopropyl, 1-butyl, 2-butyl, 2-methylpropyl or tert-

- 30 butyl radical.

"(C₁-C₆)-Haloalkyl" is to be understood as meaning an alkyl group mentioned under the expression "(C₁-C₆)-alkyl" in which one or more hydrogen atoms are replaced by the same number of identical or different halogen atoms, preferably by chlorine or fluorine, such as the trifluoromethyl, the 1-fluoroethyl, the 2,2,2-trifluoroethyl, the chloromethyl, fluoromethyl, the difluoromethyl or the 1,1,2,2-tetrafluoroethyl group.

"(C₁-C₆)-Alkoxy" is to be understood as meaning an alkoxy group whose hydrocarbon radical has the meaning given under the expression "(C₁-C₆)-alkyl".

10 The terms "alkenyl" and "alkynyl" with a range of carbon atoms stated as prefix denote a straight-chain or branched hydrocarbon radical having a number of carbon atoms which corresponds to this stated range and which contains at least one multiple bond which can be located in any position of the respective unsaturated radical. "(C₂-C₆)-Alkenyl" accordingly denotes, for example, the vinyl, allyl, 2-methyl-
15 2-propenyl, 2-butenyl, pentenyl, 2-methylpentenyl or the hexenyl group. "(C₂-C₆)-Alkynyl" denotes, for example, the ethynyl, propargyl, 2-methyl-2-propynyl; 2-butylnyl; 2-pentylnyl or the 2-hexynyl group.

"(C₃-C₈)-Cycloalkyl" denotes monocyclic alkyl radicals, such as the cyclopropyl, cyclobutyl, cyclopentyl, cyclohexyl, cycloheptyl or cyclooctyl radical, and denotes
20 bicyclic alkyl radicals, such as the norbornyl radical.

The expression "(C₃-C₈)-cycloalkyl-(C₁-C₆)-alkyl" is to be understood as meaning, for example the cyclopropylmethyl, cyclopentylmethyl, cyclohexylmethyl, cyclohexylethyl, cyclohexylbutyl, 1-methylcyclopropyl, 1-methylcyclopentyl,
25 1-methylcyclohexyl, 3-hexylcyclobutyl or the 4-tert-butylcyclohexyl radical.

"(C₁-C₆)-Alkylamino" denotes a nitrogen atom which is substituted by an alkyl radical of the above definition. "Di-(C₁-C₆)-alkylamino" denotes a nitrogen atom which is
30 substituted by two alkyl radical of the above definition.

The expression "(C₁-C₆)-alkylcarbamoyl" denotes a carbamoyl group having one hydrocarbon radical which has the meaning given under the expression "(C₁-C₆)-alkyl"; and "di-(C₁-C₆)-alkylcarbamoyl" denotes a carbamoyl group having two hydrocarbon radicals which can be identical or different.

5

The expression "aryl" is to be understood as meaning a carbocyclic, i.e. constructed of carbon atoms, aromatic radical having preferably 6 to 14, in particular 6 to 12, carbon atoms, such as, for example, phenyl, naphthyl or biphenyl, preferably phenyl.

10

The expression "heterocyclyl" preferably denotes a cyclic radical which can be completely saturated, partially unsaturated or completely unsaturated and which contains in the ring one or more identical or different atoms selected from the group consisting of nitrogen, sulfur and oxygen, where, however, two oxygen atoms may not be directly adjacent and at least one carbon atom has to be present in the ring, such as, for example, a thiophene, furan, pyrrole, thiazole, oxazole, imidazole, isothiazole, isoxazole, pyrazole, 1,3,4-oxadiazole, 1,3,4-thiadiazole, 1,3,4-triazole, 1,2,4-oxadiazole, 1,2,4-thiadiazole, 1,2,4-triazole, 1,2,3-triazole, 1,2,3,4-tetrazole, benzo[b]thiophene, benzo[b]furan, indole, benzo[c]thiophene, benzo[c]furan, isoindole, benzoxazole, benzothiazole, benzimidazole, benzisoxazole, benzisothiazole, benzopyrazole, benzothiadiazole, benzotriazole, dibenzofuran, dibenzothiophene, carbazole, pyridine, pyrazine, pyrimidine, pyridazine, 1,3,5-triazine, 1,2,4-triazine, 1,2,4,5-tetrazine, quinoline, isoquinoline, quinoxaline, quinazoline, cinnoline, 1,8-naphthyridine, 1,5-naphthyridine, 1,6-naphthyridine, 1,7-naphthyridine, phthalazine, pyridopyrimidine, purine, pteridine, 4H-quinolizine, piperidine, pyrrolidine, oxazoline, tetrahydrofuran, tetrahydropyran, isoxazolidine, thiazolidine, oxirane or oxetane radical.

Heterocyclyl preferably denotes a saturated, partially saturated or aromatic ring system having 3 to 7 ring members and 1 to 4 heteroatoms selected from the group consisting of O, S and N, where at least one carbon atom has to be present in the ring.

More preferably, heterocyclyl denotes a pyridine, pyrimidine, (1,2,4)-oxadiazole, (1,3,4)-oxadiazole, (1,3,4)-thiadiazole, (1,2,4)-thiadiazole, pyrrole, furan, thiophene, oxazole, thiazole, benzothiazole, imidazole, pyrazole, isoxazole, 1,2,4-triazole, tetrazole, pyrimidine, pyrazine, pyridazine, oxazoline, thiazoline, tetrahydrofuran, tetrahydropyran, morpholine, piperidine, piperazine, pyrroline, pyrrolidine, oxazolidine or thiazolidine radical (particularly a pyridine, pyrimidine, (1,2,4)-oxadiazole, (1,3,4)-oxadiazole, (1,3,4)-thiadiazole, 1,2,4-thiadiazole, thiazole, pyrazole, pyrrole, isoxazole, benzothiazole, 1,2,4-triazole, pyrazine, pyridazine, oxirane or oxetane radical).

10

Preferred substituents for the various aliphatic, aromatic and heterocyclic ring systems include halogen, nitro, cyano, (C₁-C₄)-alkyl, (C₃-C₆)-cycloalkyl, (C₁-C₄)-alkoxy, (C₁-C₄)-alkylthio, (C₁-C₄)-alkylsulfinyl, (C₁-C₄)-alkylsulfonyl, phenyl, benzyl or phenoxy, where in the alkyl radicals and the radicals derived therefrom one or more – and in the case of fluorine up to the maximum number of – hydrogen atoms can be replaced by halogen, preferably chlorine or fluorine.

15

More preferred substituents include halogen, nitro, cyano, (C₁-C₄)-alkyl, (C₁-C₄)-haloalkyl, (C₃-C₆)-cycloalkyl, (C₁-C₄)-alkoxy, (C₁-C₄)-haloalkoxy, (C₁-C₄)-alkylthio or (C₁-C₄)-haloalkylthio.

20

Most preferred substituents include halogen, nitro, cyano, (C₁-C₄)-alkyl, (C₁-C₄)-haloalkyl, (C₁-C₄)-alkoxy, (C₁-C₄)-haloalkoxy, (C₁-C₄)-alkylthio or (C₁-C₄)-haloalkylthio.

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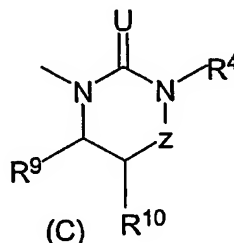
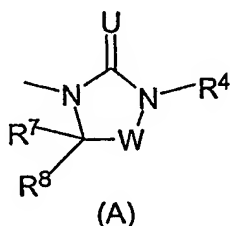
It is to be generally understood, unless otherwise stated, that the term "unsubstituted or substituted by one or more groups" or "unsubstituted or substituted by one or more groups selected from" means that such groups (or preferred groups) may be the same or different.

30

R¹ is preferably –C(=U)NR³R⁴;

R² is preferably H or R³ (more preferably R² is H);

R³ is preferably R⁵ or OH; or is (C₁-C₆)alkyl substituted by one or more R⁶ groups; or preferably R² and R³ together with the interconnecting atoms form a heterocyclic ring selected from (A) and (C):



5

R⁴ is preferably H or R⁵, or is (C₁-C₆)alkyl unsubstituted or substituted by one or more R⁶ groups;

or R³ and R⁴ together with the adjacent N atom may form a 3 to 8-membered unsaturated, partially saturated or saturated heterocyclic ring which optionally

contains up to three additional N, O or S atoms and which ring is unsubstituted or substituted by one or more R⁶ or R^{14a} groups (particularly preferred examples of such ring systems include pyrrolidin-1-yl, piperidin-1-yl, morpholin-1-yl, thiomorpholin-1-yl or its S-oxide or S, S-dioxide);

R⁵ is preferably (C₃-C₆)alkenyl, (C₃-C₆)alkynyl, (C₃-C₈)cycloalkyl, (C₃-

(C₈)cycloalkyl-(C₁-C₆)alkyl, (C₁-C₆)alkoxy, (C₃-C₆)alkenyloxy, (C₃-C₆)alkynyloxy or O(CR¹⁵R¹⁶)_p(C₃-C₈)cycloalkyl; or is -(CR¹⁵R¹⁶)_pphenyl, -(CR¹⁵R¹⁶)_pheterocyclyl, O(CR¹⁵R¹⁶)_iphenyl or O(CR¹⁵R¹⁶)_iheterocyclyl, which last four mentioned phenyl or heterocyclyl groups are unsubstituted or substituted by one or more R¹⁷ groups;

(more preferably R⁵ is (C₃-C₆)alkenyl, (C₃-C₆)alkynyl, (C₁-C₆)alkoxy, (C₃-C₆)alkenyloxy, (C₃-C₆)alkynyloxy or O(CR¹⁵R¹⁶)_p(C₃-C₈)cycloalkyl; or is -(CR¹⁵R¹⁶)_pphenyl, -(CR¹⁵R¹⁶)_pheterocyclyl, O(CR¹⁵R¹⁶)_iphenyl or O(CR¹⁵R¹⁶)_iheterocyclyl, which last four mentioned phenyl or heterocyclyl groups are unsubstituted or substituted by one or more R¹⁷ groups);

R⁶ is preferably halogen, (C₁-C₆)alkoxy, (C₁-C₆)haloalkoxy, S(O)_nR^{14a}, CN, NO₂ or

OH; (more preferably R⁶ is halogen or CN);

R¹⁷ is preferably R⁶, R^{14a} or CH₂OH;

U is preferably S or O;

W is preferably (CHR¹⁹)_q or CO;

Z is preferably O;

R^7 , R^8 , R^9 , R^{10} and R^{19} are each preferably H; or (C₁-C₆)alkyl unsubstituted or substituted by one or more R^6 groups;

or R^7 and R^8 together with the attached carbon atom represent C=O;

5 R^{14} , R^{15} and R^{16} are each preferably H or (C₁-C₆)alkyl;

R^{14a} is preferably (C₁-C₆)alkyl or (C₁-C₆)haloalkyl;

m is preferably zero;

n, r, s, t and u are preferably zero or one;

q is preferably one; and

10 heterocyclyl preferably denotes a pyridine, pyrimidine, (1,2,4)-oxadiazole, (1,3,4)-oxadiazole, (1,2,4)-thiadiazole, (1,3,4)-thiadiazole, benzothiazole, pyrrole, furan, thiophene, oxazole, thiazole, imidazole, pyrazole, isoxazole, 1,2,4-triazole, tetrazole, pyrimidine, pyrazine, pyridazine, oxazoline, thiazoline, tetrahydrofuran, tetrahydropyran, morpholine, piperidine, piperazine, pyrroline, pyrrolidine,
15 oxazolidine, thiazolidine, oxirane or oxetane radical.

A preferred class of compounds of formula (I) are those in which:

R^1 is $-C(=U)NR^3R^4$ or $-C(=V)OR^{3a}$;

20 R^{3a} is (C₃-C₈)cycloalkyl or (C₃-C₈)cycloalkyl-(C₁-C₆)alkyl, which cycloalkyl groups are unsubstituted or substituted by one or more (C₁-C₆)alkyl, (C₁-C₆)haloalkyl or R^6 groups; or is (C₁-C₆)alkyl, (C₃-C₆)alkenyl or (C₃-C₆)alkynyl which last three mentioned groups are substituted by one or more R^{6a} groups; or is (C₁-C₆)alkylamino; or is $NH(CHR^{14})_s$ aryl which aryl group is unsubstituted or substituted by one or more R^6 groups;

25 R^{6a} is (C₁-C₆)alkoxy, (C₁-C₆)haloalkoxy, $S(O)_nR^{14a}$, $CO_2(C_1-C_6)alkyl$, CO_2H , amino, (C₁-C₆)alkylamino, carbamoyl, (C₁-C₆)-alkylcarbamoyl, di-(C₁-C₆)-alkylcarbamoyl or $CH[O(C_1-C_6)alkyl]_2$; or is phenoxy unsubstituted or substituted by one or more R^{14a} or halogen groups;

and the other values are as defined in formula (I).

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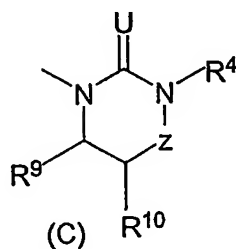
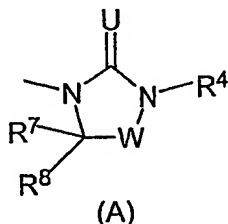
A further preferred class of compounds of formula (I) are those in which:

R^1 is $-C(=U)NR^3R^4$;

R² is H;

R³ is R⁵ or OH; or is (C₁-C₆)alkyl substituted by one or more R⁶ groups;

or R² and R³ together with the interconnecting atoms may form a heterocyclic ring selected from (A) and (C):



5

R⁴ is H or R⁵, or is (C₁-C₆)alkyl unsubstituted or substituted by one or more R⁶ groups;

or R³ and R⁴ together with the adjacent N atom may form a pyrrolidin-1-yl, piperidin-1-yl, morpholin-1-yl or thiomorpholin-1-yl (or its S-oxide or S, S-dioxide) ring;

R⁵ is (C₃-C₆)alkenyl, (C₃-C₆)alkynyl, (C₃-C₈)cycloalkyl, (C₃-C₈)cycloalkyl-(C₁-C₆)alkyl, (C₁-C₆)alkoxy, (C₃-C₆)alkenyloxy, (C₃-C₆)alkynyloxy or O(CR¹⁵R¹⁶)_p(C₃-C₈)cycloalkyl; or -(CR¹⁵R¹⁶)_pphenyl, -(CR¹⁵R¹⁶)_pheterocyclyl, O(CR¹⁵R¹⁶)_rphenyl or O(CR¹⁵R¹⁶)_rheterocyclyl, which last four mentioned phenyl or heterocyclyl groups are

unsubstituted or substituted by one or more R¹⁷ groups;

R⁶ is halogen, (C₁-C₆)alkoxy, (C₁-C₆)haloalkoxy, S(O)_nR^{14a}, CN, NO₂ or OH;

R¹⁷ is R⁶, R^{14a} or CH₂OH;

U is S or O;

W is (CHR¹⁹)_q or CO;

Z is O;

R⁷, R⁸, R⁹, R¹⁰ and R¹⁹ are each H; or (C₁-C₆)alkyl unsubstituted or substituted by one or more R⁶ groups;

or R⁷ and R⁸ together with the attached carbon atom represent C=O;

R¹⁴, R¹⁵ and R¹⁶ are each H or (C₁-C₆)alkyl;

R^{14a} is (C₁-C₆)alkyl or (C₁-C₆)haloalkyl;

m is zero;

n, r, s, t and u are zero, one or two;

25

q is one; and wherein heterocyclyl denotes a pyridine, pyrimidine, (1,2,4)-oxadiazole, (1,3,4)-oxadiazole, (1,2,4)-thiadiazole, (1,3,4)-thiadiazole, pyrrole, furan, thiophene, oxazole, thiazole, benzothiazole, imidazole, pyrazole, isoxazole, 1,2,4-triazole, tetrazole, pyrazine, pyridazine, oxazoline, thiazoline, tetrahydrofuran, tetrahydropyran, morpholine, piperidine, piperazine, pyrroline, pyrrolidine, oxazolidine, thiazolidine, oxirane or oxetane radical.

A further preferred class of compounds of formula (I) are those in which:

R^1 is $-C(=U)NR^3R^4$;

10 R^2 is H;

U is O or S;

R^3 is (C₁-C₆)haloalkyl, (C₃-C₆)alkenyl, (C₃-C₆)alkynyl, (C₃-C₈)cycloalkyl, (C₃-C₈)cycloalkyl(C₁-C₆)alkyl, (C₃-C₆)alkenyloxy, (C₃-C₆)alkynyloxy, NH₂, (C₁-C₆)alkylamino, OH, Ophenyl, pyrimidyl, benzothiazolyl, thiazolyl, thiadiazolyl, -(CH₂)₂pyrrolidin-1-yl, NHSO₂phenyl, NHCO(C₁-C₆)alkyl, NHSO₂(C₁-C₆)alkyl, NHCOPhenyl or N=C(phenyl)₂; or is pyridyl unsubstituted or substituted by one or more groups selected from halogen, (C₁-C₆)alkyl, (C₁-C₆)alkoxy, CN and NO₂; or is OCH₂phenyl which phenyl is unsubstituted or substituted by one or more groups selected from halogen, (C₁-C₆)alkyl, CN and NO₂; or is (C₁-C₆)alkoxy unsubstituted or substituted by a CO₂(C₁-C₆)alkyl group; or is -(CHR¹⁵)_pphenyl wherein p is 0, 1 or 2, R¹⁵ is H or (C₁-C₆)alkyl, and phenyl is unsubstituted or substituted by one or more groups selected from halogen, (C₁-C₆)alkyl, (C₁-C₆)haloalkyl, (C₁-C₆)alkoxy, (C₁-C₆)haloalkoxy, CN, NO₂, OH, CH₂OH, CO₂(C₁-C₆)alkyl and phenoxy which phenoxy is unsubstituted or substituted by one or more groups selected from halogen and (C₁-C₆)haloalkyl; or is (C₁-C₆)alkyl unsubstituted or substituted by one or more groups selected from (C₁-C₆)alkoxy, CN, OH, CO₂(C₁-C₆)alkyl and CH[O(C₁-C₆)alkyl]₂; or is NH(CH₂)_sphenyl wherein s is zero or 1; R^4 is H, (C₁-C₆)alkyl, (C₃-C₆)alkenyl, (C₃-C₆)alkynyl, (C₃-C₈)cycloalkyl, -(CH₂)_pphenyl wherein p is 0 or 1, or N=C[(C₁-C₆)alkyl]₂; or R^3 and R^4 together with the adjacent N atom may form a pyrrolidin-1-yl, piperidin-1-yl, morpholin-1-yl, thiomorpholin-1-yl which groups are unsubstituted or substituted

by one or more groups selected from halogen, (C₁-C₆)alkyl and OH; or form a 4,5-dihydropyrazol-1-yl ring; and

m is zero.

- 5 A further preferred class of compounds of formula (I) are those in which:

R¹ is -C(=U)NR³R⁴;

U is O;

R² is (C₁-C₆)alkyl, (C₃-C₆)alkenyl, (C₃-C₆)alkynyl or CH₂phenyl; or is (C₁-C₆)alkyl substituted by CO₂(C₁-C₆)alkyl or CH[O(C₁-C₆)alkyl]₂;

- 10 R³ is (C₃-C₆)alkenyloxy, (C₃-C₆)alkynyloxy, CH₂phenyl or OCH₂phenyl; or is (C₁-C₆)alkoxy unsubstituted or substituted by one or two CO₂(C₁-C₆)alkyl groups;

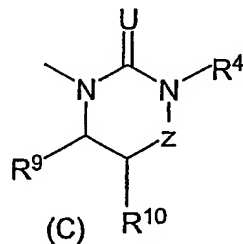
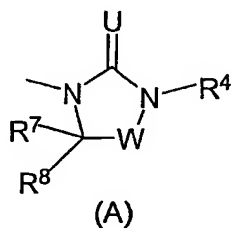
R⁴ is H or (C₁-C₆)alkyl; and

m is zero.

- 15 A further preferred class of compounds of formula (I) are those in which:

R¹ is -C(=U)NR³R⁴;

R² and R³ together with the interconnecting atoms form a heterocyclic ring selected from (A) and (C):



- 20 wherein U is O or S;

and in (A):

W is CH₂, CO or CHR¹⁹ wherein R¹⁹ is H, (C₁-C₆)alkyl or phenyl;

R⁴ is H, (C₁-C₆)alkyl, phenyl, CH₂phenyl or OCH₂phenyl;

R⁷ is H, (C₁-C₆)alkyl, (C₁-C₆)alkoxy or phenyl; and

- 25 R⁸ is H or (C₁-C₆)alkyl;

and in (C):

Z is O;

R⁴ is (C₁-C₆)alkyl, (C₃-C₈)cycloalkyl or CH₂phenyl; and

R^9 and R^{10} are each H; and
m is zero.

A further preferred class of compounds of formula (I) are those in which:

5 R^1 is $-C(=U)NR^3R^4$;

wherein U is NR^{18} ;

R^2 is H;

R^3 is (C_1-C_6) alkyl, (C_3-C_6) alkenyl, (C_3-C_6) cycloalkyl; or is (C_1-C_6) alkyl substituted by one or two (C_1-C_6) alkoxy or $CH[O(C_1-C_6)alkyl]_2$ groups;

10 R^4 and R^{18} are each the same or different H or (C_1-C_6) alkyl;

or R^3 and R^4 together with the adjacent N atom form a morpholin-1-yl or pyrazol-1-yl ring; and

m is zero.

15 A further preferred class of compounds of formula (I) are those in which:

R^1 is $-C(=V)OR^{3a}$;

wherein V is O or S;

R^2 is H, (C_3-C_8) cycloalkyl- (C_1-C_6) alkyl, $NHCH_2$ phenyl; or is (C_1-C_6) alkyl substituted by a group selected from (C_1-C_6) alkoxy, CN, OH and $S(O)_nR^{14a}$;

20 R^{3a} is (C_3-C_8) cycloalkyl or (C_3-C_8) cycloalkyl- (C_1-C_6) alkyl, which cycloalkyl groups are unsubstituted or substituted by one or more R^6 groups; or is (C_1-C_6) alkyl, (C_3-C_6) alkenyl or (C_3-C_6) alkynyl which last three mentioned groups are substituted by one or more R^6 groups; or is (C_1-C_6) alkylamino; or is $NH(CHR^{14})_s$ aryl which aryl group is unsubstituted or substituted by one or more R^6 groups; and

25 m is zero.

A more preferred class of compounds of formula (I) are those in which:

R^1 is $-C(=U)NR^3R^4$;

R^2 is H;

30 U is O or S;

R^3 is (C_1-C_6) alkoxy, C_1-C_6 haloalkoxy, (C_3-C_6) alkenyloxy, (C_3-C_6) alkynyloxy, CH_2 phenyl or OCH_2 phenyl, phenyl or 2-pyridyl which last four mentioned phenyl or

pyridyl groups are unsubstituted or substituted by one or more groups selected from halogen, (C₁-C₆)alkyl, (C₁-C₆)alkoxy, CN and NO₂;

R⁴ is H, (C₁-C₆)alkyl, (C₃-C₆)alkenyl, (C₃-C₆)alkynyl or CH₂phenyl; and

m is zero.

5

A further more preferred class of compounds of formula (I) are those in which:

R¹ is -C(=U)NR³R⁴;

R² is H;

U is O;

10 R³ is (C₁-C₆)alkoxy;

R⁴ is (C₁-C₆)alkyl; and

m is zero.

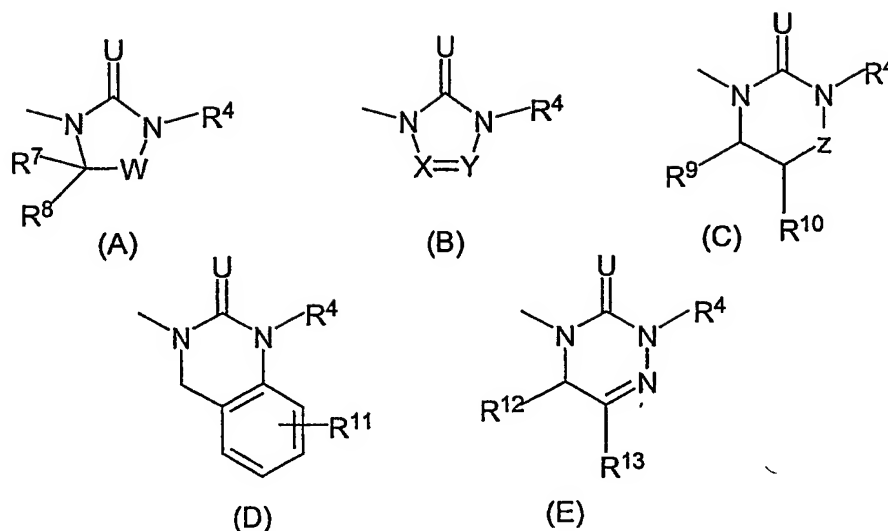
15 The compounds of general formula (I) can be prepared by the application or adaptation of known methods (i.e. methods heretofore used or described in the chemical literature.

In the following description of processes when symbols appearing in formulae are not specifically defined, it is understood that they are "as defined above" in accordance with the first definition of each symbol in the specification.

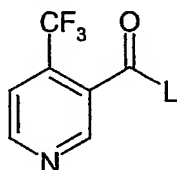
20

According to a feature of the invention compounds of formula (I) wherein R¹ is -C(=U)NR³R⁴, m is zero, and R², U, R³ and R⁴ are as defined above; or R² and R³ together with the interconnecting atoms form a heterocyclic ring selected from (A), (B), (C), (D) and (E);

16



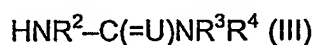
wherein R⁴, R⁷, R⁸, R⁹, R¹⁰, R¹¹, R¹², R¹³, W, X, Y and Z are as defined above, may be prepared by the reaction of a compound of formula (II):



5

(II)

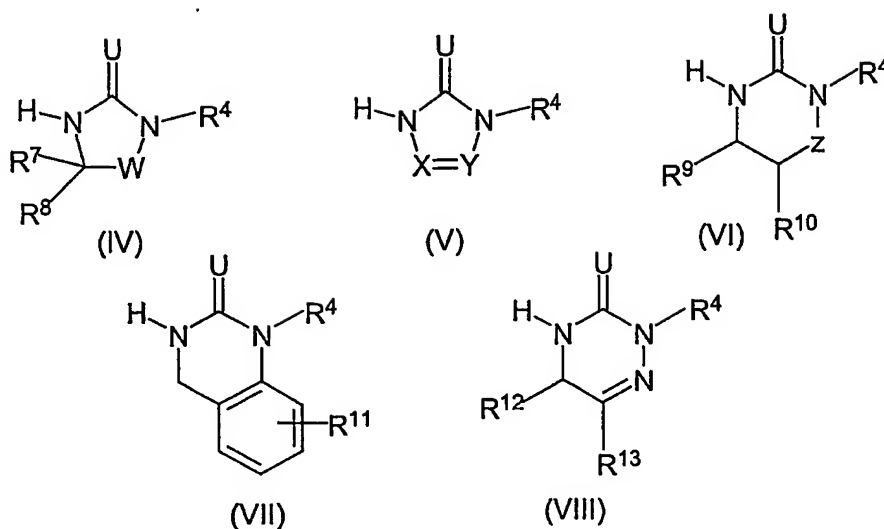
wherein L is a leaving group, generally halogen and preferably chlorine, with a compound of formula (III):



wherein R², U, R³ and R⁴ are as defined above, or with a compound of formula (IV),

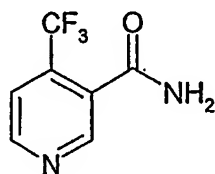
10 (V), (VI); (VII) or (VIII):

17



wherein R⁴, R⁷, R⁸, R⁹, R¹⁰, R¹¹, R¹², R¹³, W, X, Y and Z are as defined above. The reaction is generally performed in the presence of an organic base such as a tertiary amine for example triethylamine, or pyridine, or an inorganic base such as an alkali metal carbonate, for example potassium carbonate, or an alkali metal alkoxide such as sodium ethoxide, or sodium hydride, in a solvent such as dioxan, tetrahydrofuran or N,N-dimethylformamide, at a temperature of from 0° to 100°C (preferably 0° to 50°C).

- 10 According to a further feature of the present invention compounds of formula (I) wherein R¹ is -C(=U)NR³R⁴, m is zero, R² is H, U is O, and R³ and R⁴ are as defined above, may be prepared by the reaction of a compound of formula (IX):



(IX)

- 15 with oxalyl chloride or triphosgene, in an inert solvent such as dichloroethane at a temperature of from 0°C to the reflux temperature of the solvent, followed by removal of the solvent to give the corresponding acylisocyanate intermediate which is generally not isolated, and which is directly reacted with an amine of formula (X):



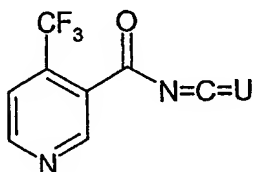
wherein R^3 and R^4 are as defined above. The reaction is generally performed in an inert solvent such as dichloroethane or tetrahydrofuran at a temperature of from 0° to 60°C .

- 5 According to a further feature of the present invention compounds of formula (I) wherein R^1 is $-\text{C}(=\text{V})\text{OR}^{3a}$, m is zero, R^2 is H, V is O, and R^{3a} is as defined above, may be prepared by the reaction of a compound of formula (IX) as defined above, with oxalyl chloride to give an acylisocyanate intermediate above which is generally not isolated, and which is directly reacted with an alcohol of formula (XI):



wherein R^3 is as defined above. The reaction is generally performed in an inert solvent such as dichloroethane or tetrahydrofuran at a temperature of from 0° to 60°C .

- 15 According to a further feature of the present invention compounds of formula (I) wherein R^1 is $-\text{C}(=\text{U})\text{NR}^3\text{R}^4$, m is zero, R^2 is H, U is O or S, and R^3 and R^4 are as defined above, may be prepared by the reaction of a compound of formula (XII).

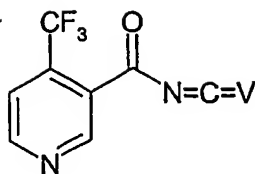


(XII)

- 20 wherein U is O or S, with a compound of formula (X) as defined above. The reaction is generally performed in an inert solvent such as dichloroethane or tetrahydrofuran at a temperature of from 0° to 60°C .

- 25 According to a further feature of the present invention compounds of formula (I) wherein R^1 is $-\text{C}(=\text{V})\text{OR}^{3a}$, m is zero, R^2 is H, V is O or S, and R^{3a} is as defined above, may be prepared by the reaction of a compound of formula (XIII).

19



(XIII)

wherein V is O or S, with a compound of formula (XI) as defined above. The reaction is generally performed in an inert solvent such as dichloroethane or tetrahydrofuran at a temperature of from 0° to 60°C.

According to a further feature of the present invention compounds of formula (I) wherein R¹ is -C(=U)NR³R⁴, m is zero, R² is H, R⁴ is H, U is O or S, and R³ is as defined above, may be prepared by the reaction of a compound of formula (IX) as defined above, with a strong base such as sodium hydride to form the corresponding salt, which is then reacted with a compound of formula (XIV):



wherein R³ is as defined above. The reaction is generally performed in an inert solvent such as N,N-dimethylformamide at a temperature of from 0° to 60°C.

15

According to a further feature of the present invention compounds of formula (I) wherein R¹ is -C(=U)NR³R⁴ or -C(=V)OR^{3a}, m is zero, R² is H, U and V are each S, and R³, R^{3a} and R⁴ are as defined above, may be prepared in a 1-pot process by the reaction of 4-trifluoromethylnicotinic acid with a suitable halogenating agent, preferably oxalyl chloride, in a solvent such as dichloroethane, optionally in the presence of N,N-dimethylformamide, at a temperature of from 0°C to the reflux temperature of the solvent, to give the corresponding acid chloride, followed by removal of the solvent, and reaction with an alkali metal thiocyanate or ammonium thiocyanate or a tetraalkylammonium thiocyanate for example tetrabutylammonium thiocyanate, generally in the presence of a base, such as an alkali metal carbonate for example potassium carbonate, in an inert solvent such as toluene or acetone, at a temperature of from 0° to 60°C, to give 4-trifluoromethyl-3-pyridylcarbonyl isothiocyanate, followed by reaction with an amine of formula (X) above or an alcohol of formula (XI) above, at a temperature of from 0° to 60°C.

According to a further feature of the invention compounds of formula (I) wherein R^1 is $-C(=U)NR^3R^4$, m is zero, U , R^3 and R^4 are as defined above, and R^2 is (C_1-C_6) alkyl, (C_3-C_6) alkenyl, (C_3-C_6) alkynyl, (C_3-C_8) cycloalkyl or (C_3-C_8) cycloalkyl- (C_1-C_6) alkyl which groups are unsubstituted or substituted by one or more R^6 groups; or is

5 $-(CR^{15}R^{16})_p$ aryl or $-(CR^{15}R^{16})_p$ heterocyclyl, which aryl or heterocyclyl groups are optionally substituted by R^{17} ; wherein R^6 , R^{15} , R^{16} and R^{17} are as defined above, may be prepared by the reaction of the corresponding compound of formula (I) wherein R^2 is H, using an alkylating agent of formula (XV):



- 10 wherein L^1 is a leaving group generally halogen and preferably chlorine. The reaction is generally performed in the presence of an organic base such as a tertiary amine for example triethylamine, or pyridine, or an inorganic base such as an alkali metal carbonate, for example potassium carbonate, or an alkali metal alkoxide such as sodium ethoxide, or sodium hydride, in a solvent such as dioxan, tetrahydrofuran or
- 15 N,N-dimethylformamide, at a temperature of from 0° to 100°C (preferably 0° to 50°C).

- According to a further feature of the invention compounds of formula (I) wherein R^1 , and R^2 are as defined above, and m is 1 may be prepared by oxidising a
- 20 corresponding compound in which m is 0. The oxidation is generally performed using hydrogen peroxide in a solvent such as acetic acid, or a peracid such as 3-chloroperbenzoic acid in a solvent such as dichloromethane or 1,2-dichloroethane, at a temperature of from 0°C to the reflux temperature of the solvent.

- 25 Intermediates of formula (II) wherein L is chlorine, may be prepared according to known procedures, for example by the reaction of the corresponding carboxylic acid of formula (II) wherein L is replaced by OH, with a suitable halogenating agent, preferably oxalyl chloride or thionyl chloride, in a solvent such as dichloroethane, optionally in the presence of N,N-dimethylformamide, at a temperature of from 0°C to
- 30 the reflux temperature of the solvent.

Intermediates of formula (XII) wherein U is S, and (XIII) wherein V is O, may be prepared according to known procedures, for example by the reaction of a compound of formula (II) as defined above, with an alkali metal thiocyanate or ammonium thiocyanate or a tetraalkylammonium thiocyanate for example

- 5 tetrabutylammonium thiocyanate, generally in the presence of a base such as an alkali metal carbonate for example potassium carbonate, in an inert solvent solvent such as toluene or acetone, at a temperature of from 0° to 100°C.

Intermediate of formula (XII) wherein U is O, may be prepared according to known
10 procedures, for example by the reaction of a compound of formula (II) as defined above, with an alkali metal cyanate or ammonium cyanate or a tetraalkylammonium cyanate for example tetrabutylammonium cyanate, generally in the presence of a base such as an alkali metal carbonate for example potassium carbonate, in an inert solvent solvent such as toluene, at a temperature of from 0° to 100°C.

15

Collections of compounds of the formula (I) which can be synthesized by the above mentioned process may also be prepared in a parallel manner, and this may be effected manually or in a semiautomated or fully automated manner. In this case, it is possible, for example, to automate the procedure of the reaction, work-up or
20 purification of the products or of the intermediates. In total, this is to be understood as meaning a procedure as is described, for example, by S.H. DeWitt in "Annual Reports in Combinatorial Chemistry and Molecular Diversity: Automated Synthesis", Volume 1, Verlag Escom 1997, pages 69 to 77.

- 25 A series of commercially available apparatuses as are offered by, for example, Stem Corporation, Woodrolfe Road, Tollesbury, Essex, CM9 8SE, England or H+P Labortechnik GmbH, Bruckmannring 28, 85764 Oberschleißheim, Germany or Radleys, Shirehill, Saffron Walden, Essex, England, may be used for the parallel procedure of the reaction and work-up. For the parallel purification of compounds of
30 the formula (I), or of intermediates obtained during the preparation, use may be made, inter alia, of chromatography apparatuses, for example those by ISCO, Inc., 4700 Superior Street, Lincoln, NE 68504, USA.

The apparatuses mentioned lead to a modular procedure in which the individual process steps are automated, but manual operations must be performed between the process steps. This can be prevented by employing semi-integrated or fully integrated automation systems where the automation modules in question are operated by, for example, robots. Such automation systems can be obtained, for example, from Zymark Corporation, Zymark Center, Hopkinton, MA 01748, USA.

In addition to what has been described here, compounds of the formula (I) may be prepared in part or fully by solid-phase-supported methods. For this purpose, individual intermediate steps or all intermediate steps of the synthesis or of a synthesis adapted to suit the procedure in question are bound to a synthetic resin. Solid-phase-supported synthesis methods are described extensively in the specialist literature, for example Barry A. Bunin in "The Combinatorial Index", Academic Press, 1998.

The use of solid-phase-supported synthesis methods permits a series of protocols which are known from the literature and which, in turn, can be performed manually or in an automated manner. For example, the "tea-bag method" (Houghten, US 4,631,211; Houghten et al., Proc. Natl. Acad. Sci, 1985, 82, 5131-5135), in which products by IRORI, 11149 North Torrey Pines Road, La Jolla, CA 92037, USA, are employed, may be semiautomated. The automation of solid-phase-supported parallel syntheses is performed successfully, for example, by apparatuses by Argonaut Technologies, Inc., 887 Industrial Road, San Carlos, CA 94070, USA or MultiSynTech GmbH, Wullener Feld 4, 58454 Witten, Germany.

The preparation of the processes described herein yields compounds of the formula (I) in the form of substance collections which are termed libraries. The present invention also relates to libraries which comprise at least two compounds of the formula (I).

Compounds of formula (II), (III), (IV), (V), (VI), (VII), (VIII), (IX), (X), (XI), (XIV) and (XV) are known or may be prepared by known methods.

The following non-limiting Examples illustrate the preparation of the compounds of formula (I).

Chemical Examples

- 5 NMR spectra were run in deuteriochloroform unless stated otherwise.
In the Examples which follow, quantities (also percentages) are weight-based, unless stated otherwise.

Example 1

- 10 Oxalyl chloride (0.15ml) was added to a suspension of 4-trifluoromethyl-3-pyridinecarboxamide (0.25g) in 1,2-dichloroethane at 20°C and then heated to reflux for 2 hours. The mixture was cooled, evaporated and the residue containing 4-trifluoromethyl-3-pyridylcarbonyl isocyanate was dissolved in tetrahydrofuran. Benzylamine (0.15ml) was added and the mixture stirred at 20°C for 2 hours and
15 evaporated. The residue was purified by silica-gel column chromatography, eluting with n-hexane/ethyl acetate (3:2), to give 1-benzyl-3-(4-trifluoromethyl-3-pyridylcarbonyl)urea (0.30g, Compound A-37).

- By proceeding in a similar manner there was prepared 1-benzyl-1-(2-hydroxyethyl)-
20 3-(4-trifluoromethyl-3-pyridylcarbonyl)urea (Compound A-862).

Example 2

- Oxalyl chloride (1.50ml) was added to a suspension of 4-trifluoromethyl-3-pyridinecarboxamide (2.0g) in 1,2-dichloroethane at 20°C, and stirred under reflux
25 for 2 hours. The mixture was evaporated and dichloromethane added to the residue containing 4-trifluoromethyl-3-pyridylcarbonyl isocyanate. To this was added at 20°C a suspension of N,O-dimethylhydroxylamine hydrochloride(2.05g) and triethylamine (3.0ml) in dichloromethane, which had been prepared in advance. The mixture was stirred for 30 minutes, then water added and the organic layer dried (magnesium
30 sulfate) and evaporated, to give after trituration with ethanol, 1-methyl-1-methoxy-3-(4-trifluoromethyl-3-pyridylcarbonyl)urea (2.2g) (Compound A-313).

By proceeding in a similar manner there was prepared 1-hydroxyl-1-isopropyl-3-(4-trifluoromethyl-3-pyridylcarbonyl)urea (Compound A-540).

Example 3

- 5 Sodium hydride (0.090g, 60% dispersion in mineral oil) was added to a solution of 4-trifluoromethyl-3-pyridinecarboxamide (0.40g) in N,N-dimethylformamide at 20°C, and stirred for 1 hour. Benzyl isocyanate (0.31 ml) was added and the mixture stirred at 20°C for 2 hours, then methyl bromoacetate (0.30 ml) added and stirring continued for 5 hours. Ethyl acetate and water were added to the solution and the
10 organic phase dried (magnesium sulfate), evaporated and the residue purified by column chromatography on silica gel, eluting with n-hexane/ethyl acetate (2:1), to give 3-benzyl-1-(4-trifluoromethyl-3-pyridylcarbonyl)hydantoin (0.50g, Compound S-132).

15 Example 4

- Methanesulfonyl chloride (0.17ml) was added to an ice-cooled mixture of 1-benzyl-1-(2-hydroxyethyl)-3-(4-trifluoromethyl-3-pyridylcarbonyl)urea (0.70g), and triethylamine (0.64ml) in dichloromethane, then stirred for 3 hours at 20°C. The mixture was washed (water), dried (magnesium sulfate), evaporated and the residue
20 purified by silica-gel chromatography, eluting with n-hexane/ethyl acetate (3:2), to give 1-benzyl-3-(4-trifluoromethyl-3-pyridylcarbonyl)-2-imidazolidinone (0.63g, Compound S-15).

Example 5

- 25 1,2-Dibromoethane (0.06ml) was added to a suspension of 1-hydroxyl-1-isopropyl-3-(4-trifluoromethyl-3-pyridylcarbonyl)urea (0.20g) and potassium carbonate (0.20g) in N,N-dimethylformamide at 20°C, and stirred for 3 hours. Ethyl acetate and water were added and the organic phase dried (magnesium sulfate), evaporated and the residue purified by column chromatography on silica gel, eluting with n-hexane/ethyl
30 acetate (2:1), to give 2-isopropyl-4-(4-trifluoromethyl-3-pyridylcarbonyl)-perhydro-1,2,4-oxadiazin-3-one (0.25g, Compound U-3).

Example 6

Oxalyl chloride (3.2 ml, 2M) was added to a suspension of 4-trifluoromethylnicotinic acid (1g) and a catalytic amount of N,N-dimethylformamide in dichloromethane, and stirred at 20°C for 1 hour. After evaporation, the residue was dissolved in acetone
5 and potassium thiocyanate (1g) added with ice bath cooling to give 4-trifluoromethyl-3-pyridylcarbonyl isothiocyanate, then N-methylaniline (0.65g) was added and the mixture stirred at 20°C for 1 hour. Ethyl acetate was added and the mixture washed with water, dried (magnesium sulfate), evaporated and the residue purified by silica-gel chromatography, eluting with n-hexane/ethyl acetate = 2/1, to give 1-methyl-1-phenyl-3-(4-trifluoromethyl-3-pyridylcarbonyl)thiourea (0.96g, Compound B-349).
10

Example 7

Oxalyl chloride (6.4ml, 2M) was added to a suspension of 4-trifluoromethylnicotinic acid (2g) and a catalytic amount of N,N-dimethylformamide in dichloromethane, and
15 stirred at 20°C for 1 hour to give a solution of 4-trifluoromethylnicotinic acid chloride. N, N-Ethylenethiourea (2.23g) was added to sodium hydride (0.82g, 60% dispersion in mineral oil) in tetrahydrofuran, and the mixture was stirred at 20°C for 1 hour, and then added to the above solution of 4-trifluoromethylnicotinic acid chloride with ice bath cooling, then stirred at 20°C for 1 hour. Ethyl acetate was added and the
20 mixture washed with water, dried (magnesium sulfate), evaporated and the residue crystallized (ethanol) to give N-(4-trifluoromethyl-3-pyridylcarbonyl)-imidazolin-2-thione (1.35 g, Compound S-356).

Example 8

25 Oxalyl chloride (9.6 ml, 2M) was added to a suspension 4-trifluoromethylnicotinic acid (3g) and a catalytic amount of N, N-dimethylformamide in dichloromethane, and stirred at 20°C for 1 hour. The mixture was evaporated, the residue dissolved in toluene and tetrabutylammonium thiocyanate (3g) and potassium carbonate (1.5g) added, then stirred at 20°C for 30 minutes to give 4-trifluoromethyl-3-pyridylcarbonyl
30 isothiocyanate 2,2,2-trifluoroethanol (3.15g) was then added, and the mixture stirred at 20°C for 1 hour. Ethyl acetate was added and the mixture washed with water, hydrochloric acid 1(M), saturated sodium bicarbonate and brine, dried (magnesium

sulfate), evaporated and recrystallised from ethanol to give 2,2,2-trifluoroethyl N-(4-trifluoromethyl-3-pyridylcarbonyl) thiocarbamate (1.2g, Compound X-45).

Example 9

- 5 Allyl bromide (0.10ml) was added to a suspension of 1-methyl-1-methoxy-3-(4-trifluoromethyl-3-pyridylcarbonyl)urea (0.25g) and potassium carbonate (0.16g) in N,N-dimethylformamide at 20°C, and stirred for 2 hours. Ethyl acetate and water were added and the organic phase dried (magnesium sulfate), evaporated and the residue purified by column chromatography on silica gel, eluting with n-hexane/ethyl acetate (2:1) to give 1-methyl-1-methoxy-3-allyl-3-(4-trifluoromethyl-3-pyridylcarbonyl)urea (0.26g, Compound E-85).

- The following preferred compounds shown in Tables 1 to 9 also form part of the present invention, and were or may be prepared in accordance with, or analogously to, the above-mentioned Examples 1 to 9 or the above-described general methods. In the Tables Ph means phenyl. Where subscripts are omitted after atoms it will be understood that they are intended, for example CH₃ means CH₃.

Compound numbers are given for reference purposes only.

20 Table I

Compounds of formula (I) in which R¹ is -C(=U)NR³R⁴; R² is H and m is zero. In Table 1 compounds A-1 to A-881 represent individual compounds in which U is O, whilst compounds B-1 to B-881 represent individual compounds in which U is S.

Compound		R ³	R ⁴
A-1	B-1	CH ₃ CH=CH	H
A-2	B-2	CH ₂ =CHCH ₂	H
A-3	B-3	CH ₃ (CH ₃)C=CH	H
A-4	B-4	(CH ₃) ₂ C=CH	H
A-5	B-5	CH ₃ CH=CHCH ₂	H
A-6	B-6	CH ₂ =C(CH ₃)CH ₂	H
A-7	B-7	CH ₃ CH=C(Cl)CH ₂	H
A-8	B-8	CH ₂ =CHCH ₂ CH ₂	H
A-9	B-9	CH ₃ CH ₂ (CH ₃)C=CH	H
A-10	B-10	(CH ₃) ₂ CHCH=CH	H

Compound		R ³	R ⁴
A-11	B-11	CH ₂ CH ₂ CH=CHCH ₂	H
A-12	B-12	CH ₃ CH=C(CH ₃)CH ₂	H
A-13	B-13	CH(CH ₃)HC=CHCH ₃	H
A-14	B-14	CH ₂ HC=C(CH ₃) ₂	H
A-15	B-15	CH ₃ CH=CHCH ₂ CH ₂	H
A-16	B-16	CH ₂ =CH ₂ CH ₂ CH ₂ CH ₂	H
A-17	B-17	CH ₂ =CH ₂ CH ₂ CH ₂ CHCH ₂	H
A-18	B-18	CHCCH ₂	H
A-19	B-19	CH ₃ CCCH ₂	H
A-20	B-20	CHCCH(CH ₃)	H
A-21	B-21	CH ₃ CCCH(CH ₃)	H
A-22	B-22	CHCC(CH ₃) ₂	H
A-23	B-23	CH ₃ CCC(CH ₃) ₂	H
A-24	B-24	cyclo-C ₃ H ₅	H
A-25	B-25	cyclo-C ₃ H ₄ (1-CH ₃)	H
A-26	B-26	cyclo-C ₄ H ₇	H
A-27	B-27	cyclo-C ₄ H ₆ (1-CH ₃)	H
A-28	B-28	cyclo-C ₅ H ₉	H
A-29	B-29	cyclo-C ₅ H ₈ (1-CH ₃)	H
A-30	B-30	cyclo-C ₆ H ₁₁	H
A-31	B-31	cyclo-C ₆ H ₁₀ (1-CH ₃)	H
A-32	B-32	(cyclo-C ₃ H ₅)CH ₂	H
A-33	B-33	(cyclo-C ₃ H ₄ (1-CH ₃))CH ₂	H
A-34	B-34	(cyclo-C ₄ H ₇)CH ₂	H
A-35	B-35	(cyclo-C ₅ H ₉)CH ₂	H
A-36	B-36	(cyclo-C ₆ H ₁₁)CH ₂	H
A-37	B-37	PhCH ₂	H
A-38	B-38	PhCH(CH ₃)	H
A-39	B-39	PhCH ₂ CH ₂	H
A-40	B-40	PhC(CH ₃) ₂	H
A-41	B-41	PhCH ₂ CH ₂	H
A-42	B-42	(2-F-Ph)CH ₂	H
A-43	B-43	(3-F-Ph)CH ₂	H
A-44	B-44	(4-F-Ph)CH ₂	H
A-45	B-45	(2-Cl-Ph)CH ₂	H
A-46	B-46	(3-Cl-Ph)CH ₂	H
A-47	B-47	(4-Cl-Ph)CH ₂	H
A-48	B-48	(2-Br-Ph)CH ₂	H
A-49	B-49	(3-Br-Ph)CH ₂	H
A-50	B-50	(4-Br-Ph)CH ₂	H
A-51	B-51	(2-I-Ph)CH ₂	H
A-52	B-52	(3-I-Ph)CH ₂	H
A-53	B-53	(4-I-Ph)CH ₂	H

Compound		R ³	R ⁴
A-54	B-54	(2-CF ₃ -Ph)CH ₂	H
A-55	B-55	(3-CF ₃ -Ph)CH ₂	H
A-56	B-56	(4-CF ₃ -Ph)CH ₂	H
A-57	B-57	(2-CH ₃ -Ph)CH ₂	H
A-58	B-58	(3-CH ₃ -Ph)CH ₂	H
A-59	B-59	(4-CH ₃ -Ph)CH ₂	H
A-60	B-60	(2-CH ₃ O-Ph)CH ₂	H
A-61	B-61	(3-CH ₃ O-Ph)CH ₂	H
A-62	B-62	(4-CH ₃ O-Ph)CH ₂	H
A-63	B-63	HO	H
A-64	B-64	CH ₃ O	H
A-65	B-65	CH ₃ CH ₂ O	H
A-66	B-66	n-C ₃ H ₇ O	H
A-67	B-67	iso-C ₃ H ₇ O	H
A-68	B-68	n-C ₄ H ₉ O	H
A-69	B-69	sec-C ₄ H ₉ O	H
A-70	B-70	iso-C ₄ H ₉ O	H
A-71	B-71	tert-C ₄ H ₉ O	H
A-72	B-72	n-C ₅ H ₁₁ O	H
A-73	B-73	n-C ₆ H ₁₃ O	H
A-74	B-74	CH ₂ =CHCH ₂ O	H
A-75	B-75	CH ₂ =C(CH ₃)CH ₂ O	H
A-76	B-76	CH ₂ =CHCH(CH ₃)O	H
A-77	B-77	CH ₂ =C(Cl)CH ₂ O	H
A-78	B-78	CH ₂ =CHC(CH ₃) ₂ O	H
A-79	B-79	CH ₃ CH=CHCH ₂ O	H
A-80	B-80	CH ₂ =CH ₂ CH ₂ CH ₂ O	H
A-81	B-81	CHCCH ₂ O	H
A-82	B-82	CH ₃ CCCH ₂ O	H
A-83	B-83	CHCCH(CH ₃)O	H
A-84	B-84	CHCC(CH ₃) ₂ O	H
A-85	B-85	CH ₃ CH ₂ O ₂ CCH ₂ O	H
A-86	B-86	PhCH ₂ O	H
A-87	B-87	2-CH ₃ O-PhCH ₂ O	H
A-88	B-88	3-CH ₃ O-PhCH ₂ O	H
A-89	B-89	4-CH ₃ O-PhCH ₂ O	H
A-90	B-90	PhO	H
A-91	B-91	2-Cl-PhO	H
A-92	B-92	3-Cl-PhO	H
A-93	B-93	4-Cl-PhO	H
A-94	B-94	2-CF ₃ -PhO	H
A-95	B-95	3-CF ₃ -PhO	H
A-96	B-96	4-CF ₃ -PhO	H

Compound		R ³	R ⁴
A-97	B-97	2-CH ₃ O-PhO	H
A-98	B-98	3-CH ₃ O-PhO	H
A-99	B-99	4-CH ₃ O-PhO	H
A-100	B-100	NH ₂	H
A-101	B-101	CH ₃ NH	H
A-102	B-102	C ₂ H ₅ NH	H
A-103	B-103	n-C ₃ H ₇ NH	H
A-104	B-104	iso-C ₃ H ₇ NH	H
A-105	B-105	n-C ₄ H ₉ NH	H
A-106	B-106	n-C ₅ H ₁₁ NH	H
A-107	B-107	n-C ₆ H ₁₃ NH	H
A-108	B-108	PhCH ₂ NH	H
A-109	B-109	PhNH	H
A-110	B-110	2-F-PhNH	H
A-111	B-111	3-F-PhNH	H
A-112	B-112	4-F-PhNH	H
A-113	B-113	2-Cl-PhNH	H
A-114	B-114	3-Cl-PhNH	H
A-115	B-115	4-Cl-PhNH	H
A-116	B-116	2-Br-PhNH	H
A-117	B-117	3-Br-PhNH	H
A-118	B-118	4-Br-PhNH	H
A-119	B-119	2-I-PhNH	H
A-120	B-120	3-I-PhNH	H
A-121	B-121	4-I-PhNH	H
A-122	B-122	2-CF ₃ -PhNH	H
A-123	B-123	3-CF ₃ -PhNH	H
A-124	B-124	4-CF ₃ -PhNH	H
A-125	B-125	2-CH ₃ -PhNH	H
A-126	B-126	3-CH ₃ -PhNH	H
A-127	B-127	4-CH ₃ -PhNH	H
A-128	B-128	2-CH ₃ O-PhNH	H
A-129	B-129	3-CH ₃ O-PhNH	H
A-130	B-130	4-CH ₃ O-PhNH	H
A-131	B-131	2-NO ₂ -PhNH	H
A-132	B-132	3-NO ₂ -PhNH	H
A-133	B-133	4-NO ₂ -PhNH	H
A-134	B-134	2-CN-PhNH	H
A-135	B-135	3-CN-PhNH	H
A-136	B-136	4-CN-PhNH	H
A-137	B-137	Ph(Me)N	H
A-138	B-138	2-F-Ph(Me)N	H
A-139	B-139	3-F-Ph(Me)N	H

Compound		R ³	R ⁴
A-140	B-140	4-F-Ph(Me)N	H
A-141	B-141	2-Cl-Ph(Me)N	H
A-142	B-142	3-Cl-Ph(Me)N	H
A-143	B-143	4-Cl-Ph(Me)N	H
A-144	B-144	3-CF ₃ -Ph(Me)N	H
A-145	B-145	4-CF ₃ -Ph(Me)N	H
A-146	B-146	2-CH ₃ O-Ph(Me)N	H
A-147	B-147	3-CH ₃ O-Ph(Me)N	H
A-148	B-148	4-CH ₃ O-Ph(Me)N	H
A-149	B-149	Ph	H
A-150	B-150	2-F-Ph	H
A-151	B-151	3-F-Ph	H
A-152	B-152	4-F-Ph	H
A-153	B-153	2-Cl-Ph	H
A-154	B-154	3-Cl-Ph	H
A-155	B-155	4-Cl-Ph	H
A-156	B-156	2-Br-Ph	H
A-157	B-157	3-Br-Ph	H
A-158	B-158	4-Br-Ph	H
A-159	B-159	2-I-Ph	H
A-160	B-160	3-I-Ph	H
A-161	B-161	4-I-Ph	H
A-162	B-162	2-CF ₃ -Ph	H
A-163	B-163	3-CF ₃ -Ph	H
A-164	B-164	4-CF ₃ -Ph	H
A-165	B-165	2-CH ₃ -Ph	H
A-166	B-166	3-CH ₃ -Ph	H
A-167	B-167	4-CH ₃ -Ph	H
A-168	B-168	2-CH ₃ O-Ph	H
A-169	B-169	3-CH ₃ O-Ph	H
A-170	B-170	4-CH ₃ O-Ph	H
A-171	B-171	2-NO ₂ -Ph	H
A-172	B-172	3-NO ₂ -Ph	H
A-173	B-173	4-NO ₂ -Ph	H
A-174	B-174	2-CN-Ph	H
A-175	B-175	3-CN-Ph	H
A-176	B-176	4-CN-Ph	H
A-177	B-177	2-CO ₂ H-Ph	H
A-178	B-178	3-CO ₂ H-Ph	H
A-179	B-179	4-CO ₂ H-Ph	H
A-180	B-180	2-CO ₂ Me-Ph	H
A-181	B-181	3-CO ₂ Me-Ph	H
A-182	B-182	4-CO ₂ Me-Ph	H

Compound		R ³	R ⁴
A-183	B-183	2-HO-Ph	H
A-184	B-184	3-HO-Ph	H
A-185	B-185	4-HO-Ph	H
A-186	B-186	2-NH ₂ -Ph	H
A-187	B-187	3-NH ₂ -Ph	H
A-188	B-188	4-NH ₂ -Ph	H
A-189	B-189	2-HOCH ₂ -Ph	H
A-190	B-190	3-HOCH ₂ -Ph	H
A-191	B-191	4-HOCH ₂ -Ph	H
A-192	B-192	2-CF ₃ O-Ph	H
A-193	B-193	3-CF ₃ O-Ph	H
A-194	B-194	4-CF ₃ O-Ph	H
A-195	B-195	2-CF ₃ CH ₂ O-Ph	H
A-196	B-196	3-CF ₃ CH ₂ O-Ph	H
A-197	B-197	4-CF ₃ CH ₂ O-Ph	H
A-198	B-198	2-(4-Cl-PhO)-Ph	H
A-199	B-199	3-(4-Cl-PhO)-Ph	H
A-200	B-200	4-(4-Cl-PhO)-Ph	H
A-201	B-201	2-(4-CF ₃ -PhO)-Ph	H
A-202	B-202	3-(4-CF ₃ -PhO)-Ph	H
A-203	B-203	4-(4-CF ₃ -PhO)-Ph	H
A-204	B-204	2,3-diCl-Ph	H
A-205	B-205	2,5-diCl-Ph	H
A-206	B-206	2,6-diCl-Ph	H
A-207	B-207	3,4-diCl-Ph	H
A-208	B-208	3,5-diCl-Ph	H
A-209	B-209	2-Pyridyl	H
A-210	B-210	3-Pyridyl	H
A-211	B-211	4-Pyridyl	H
A-212	B-212	2-Pyrimidyl	H
A-213	B-213	1-Pyrrolyl	H
A-214	B-214	1-Pyrazolyl	H
A-215	B-215	3-Pyrazolyl	H
A-216	B-216	1,2,4-Triazol-1-yl	H
A-217	B-217	1,2,4-Triazol-3-yl	H
A-218	B-218	2-Furanyl	H
A-219	B-219	3-Furanyl	H
A-220	B-220	2-Thienyl	H
A-221	B-221	3-Thienyl	H
A-222	B-222	2-Thiazolyl	H
A-223	B-223	1,3,4-Thiadiazol-2-yl	H
A-224	B-224	3-Isoxazolyl	H
A-225	B-225	CH ₃ CO	H

Compound		R ³	R ⁴
A-226	B-226	CH ₃ CH ₂ CO	H
A-227	B-227	n-C ₃ H ₇ CO	H
A-228	B-228	iso-C ₃ H ₇ CO	H
A-229	B-229	n-C ₄ H ₉ CO	H
A-230	B-230	iso-C ₄ H ₉ CO	H
A-231	B-231	sec-C ₄ H ₉ CO	H
A-232	B-232	tert-C ₄ H ₉ CO	H
A-233	B-233	n-C ₅ H ₁₁ CO	H
A-234	B-234	n-C ₆ H ₁₂ CO	H
A-235	B-235	PhCO	H
A-236	B-236	PhCH ₂ CO	H
A-237	B-237	CH ₃ SO ₂	H
A-238	B-238	C ₂ H ₅ SO ₂	H
A-239	B-239	n-C ₃ H ₇ SO ₂	H
A-240	B-240	iso-C ₃ H ₇ SO ₂	H
A-241	B-241	PhCH ₂ SO ₂	H
A-242	B-242	PhSO ₂	H
A-243	B-243	2-Cl-PhSO ₂	H
A-244	B-244	3-Cl-PhSO ₂	H
A-245	B-245	4-Cl-PhSO ₂	H
A-246	B-246	CH ₃ SO ₂ NH	H
A-247	B-247	PhSO ₂ NH	H
A-248	B-248	CF ₃ CH ₂	H
A-249	B-249	ClCH ₂ CH ₂	H
A-250	B-250	ClCH ₂ CH ₂ CH ₂	H
A-251	B-251	CH ₃ OCH ₂ CH ₂	H
A-252	B-252	CH ₃ CH ₂ OCH ₂ CH ₂	H
A-253	B-253	CH ₃ OCH ₂ CH ₂ CH ₂	H
A-254	B-254	C ₂ H ₅ OCH ₂ CH ₂ CH ₂	H
A-255	B-255	n-C ₄ H ₉ OCH ₂ CH ₂ CH ₂	H
A-256	B-256	(CH ₃ O) ₂ CHCH ₂	H
A-257	B-257	CH ₃ CONH	H
A-258	B-258	PhCONH	H
A-259	B-259	Ph ₂ C=N	H
A-260	B-260	HOCH ₂ CH ₂	H
A-261	B-261	HOCH ₂ CH ₂ CH ₂	H
A-262	B-262	CH ₃ O ₂ CCH ₂	H
A-263	B-263	CH ₃ O ₂ CCH(CH ₃)	H
A-264	B-264	CH ₃ O ₂ CC(CH ₃) ₂	H
A-265	B-265	NCCH ₂	H
A-266	B-266	NCCH(CH ₃)	H
A-267	B-267	NCC(CH ₃) ₂	H
A-268	B-268	NC(CH ₃)(iso-C ₃ H ₇)C	H

Compound		R ³	R ⁴
A-269	B-269	HOCH ₂ CH ₂ CH ₂ CH ₂	H
A-270	B-270	CHCCH ₂ O	H
A-271	B-271	CH ₃ O ₂ CCH ₂ O	H
A-272	B-272	CH ₃ O ₂ CCH(CH ₃)O	H
A-273	B-273	CH ₃ O ₂ CC(CH ₃) ₂ O	H
A-274	B-274	(1-pyrrolidinyl)CH ₂ CH ₂	H
A-275	B-275	CH ₂ =CHCH ₂	CH ₃
A-276	B-276	CH ₃ CH=CHCH ₂	CH ₃
A-277	B-277	CH ₂ =C(CH ₃)CH ₂	CH ₃
A-278	B-278	CH ₂ =CH(CH ₃)CH	CH ₃
A-279	B-279	CH ₂ =CHCH ₂ CH ₂	CH ₃
A-280	B-280	CH ₃ CH=C(CH ₃)CH ₂	CH ₃
A-281	B-281	CH(CH ₃)HC=CHCH ₃	CH ₃
A-282	B-282	C(CH ₃) ₂ HC=CH ₂	CH ₃
A-283	B-283	CH ₂ HC=C(CH ₃) ₂	CH ₃
A-284	B-284	CH ₃ CH=CHCH ₂ CH ₂	CH ₃
A-285	B-285	CH ₂ =CHCH ₂ CH ₂ CH ₂	CH ₃
A-286	B-286	CHCCH ₂	CH ₃
A-287	B-287	CH ₃ CCCH ₂	CH ₃
A-288	B-288	CHCCH(CH ₃)	CH ₃
A-289	B-289	CH ₃ CCCH(CH ₃)	CH ₃
A-290	B-290	cyclo-C ₃ H ₅	CH ₃
A-291	B-291	cyclo-C ₅ H ₉	CH ₃
A-292	B-292	cyclo-C ₆ H ₁₁	CH ₃
A-293	B-293	(cyclo-C ₃ H ₅)CH ₂	CH ₃
A-294	B-294	(cyclo-C ₅ H ₉)CH ₂	CH ₃
A-295	B-295	(cyclo-C ₆ H ₁₁)CH ₂	CH ₃
A-296	B-296	PhCH ₂	CH ₃
A-297	B-297	PhCH(CH ₃)	CH ₃
A-298	B-298	PhC(CH ₃) ₂	CH ₃
A-299	B-299	PhCH ₂ CH ₂	CH ₃
A-300	B-300	(2-F-Ph)CH ₂	CH ₃
A-301	B-301	(3-F-Ph)CH ₂	CH ₃
A-302	B-302	(4-F-Ph)CH ₂	CH ₃
A-303	B-303	(2-Cl-Ph)CH ₂	CH ₃
A-304	B-304	(3-Cl-Ph)CH ₂	CH ₃
A-305	B-305	(4-Cl-Ph)CH ₂	CH ₃
A-306	B-306	(2-CF ₃ -Ph)CH ₂	CH ₃
A-307	B-307	(3-CF ₃ -Ph)CH ₂	CH ₃
A-308	B-308	(4-CF ₃ -Ph)CH ₂	CH ₃
A-309	B-309	(2-CH ₃ O-Ph)CH ₂	CH ₃
A-310	B-310	(3-CH ₃ O-Ph)CH ₂	CH ₃
A-311	B-311	(4-CH ₃ O-Ph)CH ₂	CH ₃

Compound		R ³	R ⁴
A-312	B-312	HO	CH ₃
A-313	B-313	CH ₃ O	CH ₃
A-314	B-314	CH ₃ CH ₂ O	CH ₃
A-315	B-315	n-C ₃ H ₇ O	CH ₃
A-316	B-316	iso-C ₃ H ₇ O	CH ₃
A-317	B-317	CH ₂ =CHCH ₂ O	CH ₃
A-318	B-318	CH ₂ =C(CH ₃)CH ₂ O	CH ₃
A-319	B-319	CH ₂ =CHCH(CH ₃)O	CH ₃
A-320	B-320	CH ₂ =CHCH(CH ₃)O	CH ₃
A-321	B-321	CH ₂ =CHC(CH ₃) ₂ O	CH ₃
A-322	B-322	CH ₃ CH=CHCH ₂ O	CH ₃
A-323	B-323	CHCCH ₂ O	CH ₃
A-324	B-324	CH ₃ CCCH ₂ O	CH ₃
A-325	B-325	CHCCH(CH ₃)O	CH ₃
A-326	B-326	CH ₃ O ₂ CCH(CH ₃)O	CH ₃
A-327	B-327	CH ₃ O ₂ CC(CH ₃) ₂ O	CH ₃
A-328	B-328	CH ₃ O ₂ CCH ₂ O	CH ₃
A-329	B-329	PhCH ₂ O	CH ₃
A-330	B-330	PhO	CH ₃
A-331	B-331	NH ₂	CH ₃
A-332	B-332	CH ₃ NH	CH ₃
A-333	B-333	C ₂ H ₅ NH	CH ₃
A-334	B-334	n-C ₃ H ₇ NH	CH ₃
A-335	B-335	iso-C ₃ H ₇ NH	CH ₃
A-336	B-336	PhCH ₂ NH	CH ₃
A-337	B-337	PhNH	CH ₃
A-338	B-338	2-F-PhNH	CH ₃
A-339	B-339	3-F-PhNH	CH ₃
A-340	B-340	4-F-PhNH	CH ₃
A-341	B-341	2-Cl-PhNH	CH ₃
A-342	B-342	3-Cl-PhNH	CH ₃
A-343	B-343	4-Cl-PhNH	CH ₃
A-344	B-344	2-CF ₃ -PhNH	CH ₃
A-345	B-345	3-CF ₃ -PhNH	CH ₃
A-346	B-346	2-CH ₃ O-PhNH	CH ₃
A-347	B-347	3-CH ₃ O-PhNH	CH ₃
A-348	B-348	4-CH ₃ O-PhNH	CH ₃
A-349	B-349	Ph	CH ₃
A-350	B-350	2-F-Ph	CH ₃
A-351	B-351	3-F-Ph	CH ₃
A-352	B-352	4-F-Ph	CH ₃
A-353	B-353	2-Cl-Ph	CH ₃
A-354	B-354	3-Cl-Ph	CH ₃

Compound		R ³	R ⁴
A-355	B-355	4-Cl-Ph	CH ₃
A-356	B-356	2-Br-Ph	CH ₃
A-357	B-357	3-Br-Ph	CH ₃
A-358	B-358	4-Br-Ph	CH ₃
A-359	B-359	2-I-Ph	CH ₃
A-360	B-360	3-I-Ph	CH ₃
A-361	B-361	4-I-Ph	CH ₃
A-362	B-362	2-CF ₃ -Ph	CH ₃
A-363	B-363	3-CF ₃ -Ph	CH ₃
A-364	B-364	4-CF ₃ -Ph	CH ₃
A-365	B-365	2-CH ₃ -Ph	CH ₃
A-366	B-366	3-CH ₃ -Ph	CH ₃
A-367	B-367	4-CH ₃ -Ph	CH ₃
A-368	B-368	2-CH ₃ O-Ph	CH ₃
A-369	B-369	3-CH ₃ O-Ph	CH ₃
A-370	B-370	4-CH ₃ O-Ph	CH ₃
A-371	B-371	2-NO ₂ -Ph	CH ₃
A-372	B-372	3-NO ₂ -Ph	CH ₃
A-373	B-373	4-NO ₂ -Ph	CH ₃
A-374	B-374	2-CN-Ph	CH ₃
A-375	B-375	3-CN-Ph	CH ₃
A-376	B-376	4-CN-Ph	CH ₃
A-377	B-377	2-CO ₂ Me-Ph	CH ₃
A-378	B-378	3-CO ₂ Me-Ph	CH ₃
A-379	B-379	4-CO ₂ Me-Ph	CH ₃
A-380	B-380	2-HO-Ph	CH ₃
A-381	B-381	3-HO-Ph	CH ₃
A-382	B-382	4-HO-Ph	CH ₃
A-383	B-383	2-NH ₂ -Ph	CH ₃
A-384	B-384	3-NH ₂ -Ph	CH ₃
A-385	B-385	4-NH ₂ -Ph	CH ₃
A-386	B-386	2-CF ₃ O-Ph	CH ₃
A-387	B-387	3-CF ₃ O-Ph	CH ₃
A-388	B-388	4-CF ₃ O-Ph	CH ₃
A-389	B-389	4-CF ₃ CH ₂ O-Ph	CH ₃
A-390	B-390	4-(4-Cl-PhO)-Ph	CH ₃
A-391	B-391	4-(4-CF ₃ -PhO)-Ph	CH ₃
A-392	B-392	2,3-diCl-Ph	CH ₃
A-393	B-393	2,4-diCl-Ph	CH ₃
A-394	B-394	2,5-diCl-Ph	CH ₃
A-395	B-395	2,6-diCl-Ph	CH ₃
A-396	B-396	3,4-diCl-Ph	CH ₃
A-397	B-397	3,5-diCl-Ph	CH ₃

Compound		R ³	R ⁴
A-398	B-398	2-Pyridyl	CH ₃
A-399	B-399	3-Pyridyl	CH ₃
A-400	B-400	4-Pyridyl	CH ₃
A-401	B-401	2-Pyrimidyl	CH ₃
A-402	B-402	1-Pyrrolyl	CH ₃
A-403	B-403	1-Pyrazolyl	CH ₃
A-404	B-404	3-Pyrazolyl	CH ₃
A-405	B-405	1,2,4-Triazol-1-yl	CH ₃
A-406	B-406	1,2,4-Triazol-3-yl	CH ₃
A-407	B-407	2-Furanyl	CH ₃
A-408	B-408	3-Furanyl	CH ₃
A-409	B-409	2-Thienyl	CH ₃
A-410	B-410	3-Thienyl	CH ₃
A-411	B-411	2-Thiazolyl	CH ₃
A-412	B-412	1,3,4-Thiadiazol-2-yl	CH ₃
A-413	B-413	3-Isoxazolyl	CH ₃
A-414	B-414	CH ₃ CO	CH ₃
A-415	B-415	PhCO	CH ₃
A-416	B-416	PhCH ₂ CO	CH ₃
A-417	B-417	CH ₃ SO ₂ NH	CH ₃
A-418	B-418	PhSO ₂ NH	CH ₃
A-419	B-419	CF ₃ CH ₂	CH ₃
A-420	B-420	ClCH ₂ CH ₂	CH ₃
A-421	B-421	ClCH ₂ CH ₂ CH ₂	CH ₃
A-422	B-422	CH ₃ OCH ₂ CH ₂	CH ₃
A-423	B-423	CH ₃ CH ₂ OCH ₂ CH ₂	CH ₃
A-424	B-424	CH ₃ OCH ₂ CH ₂ CH ₂	CH ₃
A-425	B-425	C ₂ H ₅ OCH ₂ CH ₂ CH ₂	CH ₃
A-426	B-426	n-C ₄ H ₉ OCH ₂ CH ₂ CH ₂	CH ₃
A-427	B-427	(CH ₃ O) ₂ CHCH ₂	CH ₃
A-428	B-428	CH ₃ CONH	CH ₃
A-429	B-429	PhCONH	CH ₃
A-430	B-430	Ph ₂ C=N	CH ₃
A-431	B-431	HOCH ₂ CH ₂	CH ₃
A-432	B-432	HOCH ₂ CH ₂ CH ₂	CH ₃
A-433	B-433	CH ₃ O ₂ CCH ₂	CH ₃
A-434	B-434	CH ₃ O ₂ CCH(CH ₃)	CH ₃
A-435	B-435	CH ₃ O ₂ CC(CH ₃) ₂	CH ₃
A-436	B-436	NCCH ₂	CH ₃
A-437	B-437	NC(CH ₃)(iso-C ₃ H ₇)C	CH ₃
A-438	B-438	(1-pyrrolidiny)CH ₂ CH ₂	C ₂ H ₅
A-439	B-439	CH ₂ =CHCH ₂	C ₂ H ₅
A-440	B-440	CHCCH ₂	C ₂ H ₅

Compound		R ³	R ⁴
A-441	B-441	CH ₃ CCCH ₂	C ₂ H ₅
A-442	B-442	(cyclo-C ₃ H ₅)CH ₂	C ₂ H ₅
A-443	B-443	PhCH ₂	C ₂ H ₅
A-444	B-444	PhCH ₂ CH ₂	C ₂ H ₅
A-445	B-445	(2-Cl-Ph)CH ₂	C ₂ H ₅
A-446	B-446	(3-Cl-Ph)CH ₂	C ₂ H ₅
A-447	B-447	(4-Cl-Ph)CH ₂	C ₂ H ₅
A-448	B-448	(2-CF ₃ -Ph)CH ₂	C ₂ H ₅
A-449	B-449	(3-CF ₃ -Ph)CH ₂	C ₂ H ₅
A-450	B-450	(4-CF ₃ -Ph)CH ₂	C ₂ H ₅
A-451	B-451	(2-CH ₃ O-Ph)CH ₂	C ₂ H ₅
A-452	B-452	(3-CH ₃ O-Ph)CH ₂	C ₂ H ₅
A-453	B-453	(4-CH ₃ O-Ph)CH ₂	C ₂ H ₅
A-454	B-454	HO	C ₂ H ₅
A-455	B-455	CH ₃ O	C ₂ H ₅
A-456	B-456	CH ₃ CH ₂ O	C ₂ H ₅
A-457	B-457	n-C ₃ H ₇ O	C ₂ H ₅
A-458	B-458	iso-C ₃ H ₇ O	C ₂ H ₅
A-459	B-459	CH ₂ =CHCH ₂ O	C ₂ H ₅
A-460	B-460	CHCCH ₂ O	C ₂ H ₅
A-461	B-461	PhCH ₂ O	C ₂ H ₅
A-462	B-462	PhO	C ₂ H ₅
A-463	B-463	NH ₂	C ₂ H ₅
A-464	B-464	CH ₃ NH	C ₂ H ₅
A-465	B-465	C ₂ H ₅ NH	C ₂ H ₅
A-466	B-466	n-C ₃ H ₇ NH	C ₂ H ₅
A-467	B-467	iso-C ₃ H ₇ NH	C ₂ H ₅
A-468	B-468	PhCH ₂ NH	C ₂ H ₅
A-469	B-469	PhNH	C ₂ H ₅
A-470	B-470	2-Cl-PhNH	C ₂ H ₅
A-471	B-471	3-Cl-PhNH	C ₂ H ₅
A-472	B-472	4-Cl-PhNH	C ₂ H ₅
A-473	B-473	2-CF ₃ -PhNH	C ₂ H ₅
A-474	B-474	3-CF ₃ -PhNH	C ₂ H ₅
A-475	B-475	2-CH ₃ O-PhNH	C ₂ H ₅
A-476	B-476	3-CH ₃ O-PhNH	C ₂ H ₅
A-477	B-477	4-CH ₃ O-PhNH	C ₂ H ₅
A-478	B-478	Ph	C ₂ H ₅
A-479	B-479	2-Cl-Ph	C ₂ H ₅
A-480	B-480	3-Cl-Ph	C ₂ H ₅
A-481	B-481	4-Cl-Ph	C ₂ H ₅
A-482	B-482	2-CF ₃ -Ph	C ₂ H ₅
A-483	B-483	3-CF ₃ -Ph	C ₂ H ₅

Compound		R ³	R ⁴
A-484	B-484	4-CF ₃ -Ph	C ₂ H ₅
A-485	B-485	2-CH ₃ O-Ph	C ₂ H ₅
A-486	B-486	3-CH ₃ O-Ph	C ₂ H ₅
A-487	B-487	4-CH ₃ O-Ph	C ₂ H ₅
A-488	B-488	2-HO-Ph	C ₂ H ₅
A-489	B-489	3-HO-Ph	C ₂ H ₅
A-490	B-490	4-HO-Ph	C ₂ H ₅
A-491	B-491	2-NH ₂ -Ph	C ₂ H ₅
A-492	B-492	3-NH ₂ -Ph	C ₂ H ₅
A-493	B-493	4-NH ₂ -Ph	C ₂ H ₅
A-494	B-494	2-HOCH ₂ -Ph	C ₂ H ₅
A-495	B-495	4-CF ₃ O-Ph	C ₂ H ₅
A-496	B-496	4-CF ₃ CH ₂ O-Ph	C ₂ H ₅
A-497	B-497	4-(4-Cl-PhO)-Ph	C ₂ H ₅
A-498	B-498	4-(4-CF ₃ -PhO)-Ph	C ₂ H ₅
A-499	B-499	2,3-diCl-Ph	C ₂ H ₅
A-500	B-500	1-Pyrrolyl	C ₂ H ₅
A-501	B-501	1-Pyrazolyl	C ₂ H ₅
A-502	B-502	1,2,4-Triazol-1-yl	C ₂ H ₅
A-503	B-503	2-Thiazolyl	C ₂ H ₅
A-504	B-504	1,3,4-Thiadiazol-2-yl	C ₂ H ₅
A-505	B-505	CH ₃ CO	C ₂ H ₅
A-506	B-506	PhCO	C ₂ H ₅
A-507	B-507	PhSO ₂ NH	C ₂ H ₅
A-508	B-508	CF ₃ CH ₂	C ₂ H ₅
A-509	B-509	ClCH ₂ CH ₂	C ₂ H ₅
A-510	B-510	ClCH ₂ CH ₂ CH ₂	C ₂ H ₅
A-511	B-511	CH ₃ OCH ₂ CH ₂	C ₂ H ₅
A-512	B-512	CH ₃ CH ₂ OCH ₂ CH ₂	C ₂ H ₅
A-513	B-513	CH ₃ OCH ₂ CH ₂ CH ₂	C ₂ H ₅
A-514	B-514	C ₂ H ₅ OCH ₂ CH ₂ CH ₂	C ₂ H ₅
A-515	B-515	n-C ₄ H ₉ OCH ₂ CH ₂ CH ₂	C ₂ H ₅
A-516	B-516	(CH ₃ O) ₂ CHCH ₂	C ₂ H ₅
A-517	B-517	CH ₃ CONH	C ₂ H ₅
A-518	B-518	PhCONH	C ₂ H ₅
A-519	B-519	HOCH ₂ CH ₂	C ₂ H ₅
A-520	B-520	HOCH ₂ CH ₂ CH ₂	C ₂ H ₅
A-521	B-521	CH ₃ O ₂ CCH ₂	C ₂ H ₅
A-522	B-522	CH ₃ O ₂ CCH(CH ₃)	C ₂ H ₅
A-523	B-523	NCCH ₂	n-C ₃ H ₇
A-524	B-524	HOCH ₂ CH ₂	n-C ₃ H ₇
A-525	B-525	CH ₂ =CHCH ₂	iso-C ₃ H ₇
A-526	B-526	CHCCH ₂	iso-C ₃ H ₇

Compound		R ³	R ⁴
A-527	B-527	CH ₃ CCCH ₂	iso-C ₃ H ₇
A-528	B-528	(cyclo-C ₃ H ₅)CH ₂	iso-C ₃ H ₇
A-529	B-529	PhCH ₂	iso-C ₃ H ₇
A-530	B-530	PhCH ₂ CH ₂	iso-C ₃ H ₇
A-531	B-531	(2-Cl-Ph)CH ₂	iso-C ₃ H ₇
A-532	B-532	(3-Cl-Ph)CH ₂	iso-C ₃ H ₇
A-533	B-533	(4-Cl-Ph)CH ₂	iso-C ₃ H ₇
A-534	B-534	(2-CF ₃ -Ph)CH ₂	iso-C ₃ H ₇
A-535	B-535	(3-CF ₃ -Ph)CH ₂	iso-C ₃ H ₇
A-536	B-536	(4-CF ₃ -Ph)CH ₂	iso-C ₃ H ₇
A-537	B-537	(2-CH ₃ O-Ph)CH ₂	iso-C ₃ H ₇
A-538	B-538	(3-CH ₃ O-Ph)CH ₂	iso-C ₃ H ₇
A-539	B-539	(4-CH ₃ O-Ph)CH ₂	iso-C ₃ H ₇
A-540	B-540	HO	iso-C ₃ H ₇
A-541	B-541	CH ₃ O	iso-C ₃ H ₇
A-542	B-542	CH ₃ CH ₂ O	iso-C ₃ H ₇
A-543	B-543	n-C ₃ H ₇ O	iso-C ₃ H ₇
A-544	B-544	iso-C ₃ H ₇ O	iso-C ₃ H ₇
A-545	B-545	CH ₂ =CHCH ₂ O	iso-C ₃ H ₇
A-546	B-546	CHCCH ₂ O	iso-C ₃ H ₇
A-547	B-547	PhCH ₂ O	iso-C ₃ H ₇
A-548	B-548	PhO	iso-C ₃ H ₇
A-549	B-549	NH ₂	iso-C ₃ H ₇
A-550	B-550	CH ₃ NH	iso-C ₃ H ₇
A-551	B-551	C ₂ H ₅ NH	iso-C ₃ H ₇
A-552	B-552	n-C ₃ H ₇ NH	iso-C ₃ H ₇
A-553	B-553	iso-C ₃ H ₇ NH	iso-C ₃ H ₇
A-554	B-554	PhCH ₂ NH	iso-C ₃ H ₇
A-555	B-555	PhNH	iso-C ₃ H ₇
A-556	B-556	2-Cl-PhNH	iso-C ₃ H ₇
A-557	B-557	3-Cl-PhNH	iso-C ₃ H ₇
A-558	B-558	4-Cl-PhNH	iso-C ₃ H ₇
A-559	B-559	2-CF ₃ -PhNH	iso-C ₃ H ₇
A-560	B-560	3-CF ₃ -PhNH	iso-C ₃ H ₇
A-561	B-561	2-CH ₃ O-PhNH	iso-C ₃ H ₇
A-562	B-562	3-CH ₃ O-PhNH	iso-C ₃ H ₇
A-563	B-563	4-CH ₃ O-PhNH	iso-C ₃ H ₇
A-564	B-564	Ph	iso-C ₃ H ₇
A-565	B-565	2-Cl-Ph	iso-C ₃ H ₇
A-566	B-566	3-Cl-Ph	iso-C ₃ H ₇
A-567	B-567	4-Cl-Ph	iso-C ₃ H ₇
A-568	B-568	2-CF ₃ -Ph	iso-C ₃ H ₇
A-569	B-569	3-CF ₃ -Ph	iso-C ₃ H ₇

Compound		R ³	R ⁴
A-570	B-570	4-CF ₃ -Ph	iso-C ₃ H ₇
A-571	B-571	2-CH ₃ O-Ph	iso-C ₃ H ₇
A-572	B-572	3-CH ₃ O-Ph	iso-C ₃ H ₇
A-573	B-573	4-CH ₃ O-Ph	iso-C ₃ H ₇
A-574	B-574	2-HO-Ph	iso-C ₃ H ₇
A-575	B-575	3-HO-Ph	iso-C ₃ H ₇
A-576	B-576	4-HO-Ph	iso-C ₃ H ₇
A-577	B-577	2-NH ₂ -Ph	iso-C ₃ H ₇
A-578	B-578	3-NH ₂ -Ph	iso-C ₃ H ₇
A-579	B-579	4-NH ₂ -Ph	iso-C ₃ H ₇
A-580	B-580	2-HOCH ₂ -Ph	iso-C ₃ H ₇
A-581	B-581	4-CF ₃ O-Ph	iso-C ₃ H ₇
A-582	B-582	4-CF ₃ CH ₂ O-Ph	iso-C ₃ H ₇
A-583	B-583	4-(4-Cl-PhO)-Ph	iso-C ₃ H ₇
A-584	B-584	4-(4-CF ₃ -PhO)-Ph	iso-C ₃ H ₇
A-585	B-585	2,3-diCl-Ph	iso-C ₃ H ₇
A-586	B-586	1-Pyrrolyl	iso-C ₃ H ₇
A-587	B-587	1-Pyrazolyl	iso-C ₃ H ₇
A-588	B-588	1,2,4-Triazol-1-yl	iso-C ₃ H ₇
A-589	B-589	2-Thiazolyl	iso-C ₃ H ₇
A-590	B-590	1,3,4-Thiadiazol-2-yl	iso-C ₃ H ₇
A-591	B-591	CH ₃ CO	iso-C ₃ H ₇
A-592	B-592	PhCO	iso-C ₃ H ₇
A-593	B-593	PhSO ₂ NH	iso-C ₃ H ₇
A-594	B-594	CF ₃ CH ₂	iso-C ₃ H ₇
A-595	B-595	ClCH ₂ CH ₂	iso-C ₃ H ₇
A-596	B-596	ClCH ₂ CH ₂ CH ₂	iso-C ₃ H ₇
A-597	B-597	CH ₃ OCH ₂ CH ₂	iso-C ₃ H ₇
A-598	B-598	CH ₃ CH ₂ OCH ₂ CH ₂	iso-C ₃ H ₇
A-599	B-599	CH ₃ OCH ₂ CH ₂ CH ₂	iso-C ₃ H ₇
A-600	B-600	C ₂ H ₅ OCH ₂ CH ₂ CH ₂	iso-C ₃ H ₇
A-601	B-601	n-C ₄ H ₉ OCH ₂ CH ₂ CH ₂	iso-C ₃ H ₇
A-602	B-602	(CH ₃ O) ₂ CHCH ₂	iso-C ₃ H ₇
A-603	B-603	CH ₃ CONH	iso-C ₃ H ₇
A-604	B-604	PhCONH	iso-C ₃ H ₇
A-605	B-605	HOCH ₂ CH ₂	iso-C ₃ H ₇
A-606	B-606	HOCH ₂ CH ₂ CH ₂	iso-C ₃ H ₇
A-607	B-607	CH ₃ O ₂ CCH ₂	iso-C ₃ H ₇
A-608	B-608	CH ₃ O ₂ CCH(CH ₃)	iso-C ₃ H ₇
A-609	B-609	NCCH ₂	iso-C ₃ H ₇
A-610	B-610	NC(CH ₃)(iso-C ₃ H ₇)	tert-C ₄ H ₉
A-611	B-611	CH ₂ =CHCH ₂	tert-C ₄ H ₉
A-612	B-612	CHCCH ₂	tert-C ₄ H ₉

Compound		R ³	R ⁴
A-613	B-613	CH ₃ CCCH ₂	tert-C ₄ H ₉
A-614	B-614	(cyclo-C ₃ H ₅)CH ₂	tert-C ₄ H ₉
A-615	B-615	PhCH ₂	tert-C ₄ H ₉
A-616	B-616	PhCH ₂ CH ₂	tert-C ₄ H ₉
A-617	B-617	(2-Cl-Ph)CH ₂	tert-C ₄ H ₉
A-618	B-618	(3-Cl-Ph)CH ₂	tert-C ₄ H ₉
A-619	B-619	(4-Cl-Ph)CH ₂	tert-C ₄ H ₉
A-620	B-620	(2-CF ₃ -Ph)CH ₂	tert-C ₄ H ₉
A-621	B-621	(3-CF ₃ -Ph)CH ₂	tert-C ₄ H ₉
A-622	B-622	(4-CF ₃ -Ph)CH ₂	tert-C ₄ H ₉
A-623	B-623	(2-CH ₃ O-Ph)CH ₂	tert-C ₄ H ₉
A-624	B-624	(3-CH ₃ O-Ph)CH ₂	tert-C ₄ H ₉
A-625	B-625	(4-CH ₃ O-Ph)CH ₂	tert-C ₄ H ₉
A-626	B-626	HO	tert-C ₄ H ₉
A-627	B-627	CH ₃ O	tert-C ₄ H ₉
A-628	B-628	CH ₃ CH ₂ O	tert-C ₄ H ₉
A-629	B-629	n-C ₃ H ₇ O	tert-C ₄ H ₉
A-630	B-630	iso-C ₃ H ₇ O	tert-C ₄ H ₉
A-631	B-631	CH ₂ =CHCH ₂ O	tert-C ₄ H ₉
A-632	B-632	CHCCH ₂ O	tert-C ₄ H ₉
A-633	B-633	PhCH ₂ O	tert-C ₄ H ₉
A-634	B-634	PhO	tert-C ₄ H ₉
A-635	B-635	NH ₂	tert-C ₄ H ₉
A-636	B-636	CH ₃ NH	tert-C ₄ H ₉
A-637	B-637	C ₂ H ₅ NH	tert-C ₄ H ₉
A-638	B-638	n-C ₃ H ₇ NH	tert-C ₄ H ₉
A-639	B-639	iso-C ₃ H ₇ NH	tert-C ₄ H ₉
A-640	B-640	PhCH ₂ NH	tert-C ₄ H ₉
A-641	B-641	PhNH	tert-C ₄ H ₉
A-642	B-642	2-Cl-PhNH	tert-C ₄ H ₉
A-643	B-643	3-Cl-PhNH	tert-C ₄ H ₉
A-644	B-644	4-Cl-PhNH	tert-C ₄ H ₉
A-645	B-645	2-CF ₃ -PhNH	tert-C ₄ H ₉
A-646	B-646	3-CF ₃ -PhNH	tert-C ₄ H ₉
A-647	B-647	2-CH ₃ O-PhNH	tert-C ₄ H ₉
A-648	B-648	3-CH ₃ O-PhNH	tert-C ₄ H ₉
A-649	B-649	4-CH ₃ O-PhNH	tert-C ₄ H ₉
A-650	B-650	Ph	tert-C ₄ H ₉
A-651	B-651	2-Cl-Ph	tert-C ₄ H ₉
A-652	B-652	3-Cl-Ph	tert-C ₄ H ₉
A-653	B-653	4-Cl-Ph	tert-C ₄ H ₉
A-654	B-654	2-CF ₃ -Ph	tert-C ₄ H ₉
A-655	B-655	3-CF ₃ -Ph	tert-C ₄ H ₉

Compound		R ³	R ⁴
A-656	B-656	4-CF ₃ -Ph	tert-C ₄ H ₉
A-657	B-657	2-CH ₃ O-Ph	tert-C ₄ H ₉
A-658	B-658	3-CH ₃ O-Ph	tert-C ₄ H ₉
A-659	B-659	4-CH ₃ O-Ph	tert-C ₄ H ₉
A-660	B-660	2-HO-Ph	tert-C ₄ H ₉
A-661	B-661	3-HO-Ph	tert-C ₄ H ₉
A-662	B-662	4-HO-Ph	tert-C ₄ H ₉
A-663	B-663	2-NH ₂ -Ph	tert-C ₄ H ₉
A-664	B-664	3-NH ₂ -Ph	tert-C ₄ H ₉
A-665	B-665	4-NH ₂ -Ph	tert-C ₄ H ₉
A-666	B-666	2-HOCH ₂ -Ph	tert-C ₄ H ₉
A-667	B-667	4-CF ₃ O-Ph	tert-C ₄ H ₉
A-668	B-668	4-CF ₃ CH ₂ O-Ph	tert-C ₄ H ₉
A-669	B-669	4-(4-Cl-PhO)-Ph	tert-C ₄ H ₉
A-670	B-670	4-(4-CF ₃ -PhO)-Ph	tert-C ₄ H ₉
A-671	B-671	2,3-diCl-Ph	tert-C ₄ H ₉
A-672	B-672	1-Pyrrolyl	tert-C ₄ H ₉
A-673	B-673	1-Pyrazolyl	tert-C ₄ H ₉
A-674	B-674	1,2,4-Triazol-1-yl	tert-C ₄ H ₉
A-675	B-675	2-Thiazolyl	tert-C ₄ H ₉
A-676	B-676	1,3,4-Thiadiazol-2-yl	tert-C ₄ H ₉
A-677	B-677	CH ₃ CO	tert-C ₄ H ₉
A-678	B-678	PhCO	tert-C ₄ H ₉
A-679	B-679	PhSO ₂ NH	tert-C ₄ H ₉
A-680	B-680	CF ₃ CH ₂	tert-C ₄ H ₉
A-681	B-681	ClCH ₂ CH ₂	tert-C ₄ H ₉
A-682	B-682	ClCH ₂ CH ₂ CH ₂	tert-C ₄ H ₉
A-683	B-683	CH ₃ OCH ₂ CH ₂	tert-C ₄ H ₉
A-684	B-684	CH ₃ CH ₂ OCH ₂ CH ₂	tert-C ₄ H ₉
A-685	B-685	CH ₃ OCH ₂ CH ₂ CH ₂	tert-C ₄ H ₉
A-686	B-686	C ₂ H ₅ OCH ₂ CH ₂ CH ₂	tert-C ₄ H ₉
A-687	B-687	n-C ₄ H ₉ OCH ₂ CH ₂ CH ₂	tert-C ₄ H ₉
A-688	B-688	(CH ₃ O) ₂ CHCH ₂	tert-C ₄ H ₉
A-689	B-689	CH ₃ CONH	tert-C ₄ H ₉
A-690	B-690	PhCONH	tert-C ₄ H ₉
A-691	B-691	HOCH ₂ CH ₂	tert-C ₄ H ₉
A-692	B-692	HOCH ₂ CH ₂ CH ₂	tert-C ₄ H ₉
A-693	B-693	CH ₃ O ₂ CCH ₂	tert-C ₄ H ₉
A-694	B-694	CH ₃ O ₂ CCH(CH ₃)	tert-C ₄ H ₉
A-695	B-695	NCCH ₂	tert-C ₄ H ₉
A-696	B-696	NC(CH ₃)(iso-C ₃ H ₇)C	CH ₂ =CHCH ₂
A-697	B-697	CH ₂ =CHCH ₂	CH ₂ =CHCH ₂
A-698	B-698	CHCCH ₂	CH ₂ =CHCH ₂

Compound		R ³	R ⁴
A-699	B-699	CH ₃ CCCH ₂	CH ₂ =CHCH ₂
A-700	B-700	(cyclo-C ₃ H ₅)CH ₂	CH ₂ =CHCH ₂
A-701	B-701	PhCH ₂	CH ₂ =CHCH ₂
A-702	B-702	PhCH ₂ CH ₂	CH ₂ =CHCH ₂
A-703	B-703	(2-Cl-Ph)CH ₂	CH ₂ =CHCH ₂
A-704	B-704	(3-Cl-Ph)CH ₂	CH ₂ =CHCH ₂
A-705	B-705	(4-Cl-Ph)CH ₂	CH ₂ =CHCH ₂
A-706	B-706	(2-CF ₃ -Ph)CH ₂	CH ₂ =CHCH ₂
A-707	B-707	(3-CF ₃ -Ph)CH ₂	CH ₂ =CHCH ₂
A-708	B-708	(4-CF ₃ -Ph)CH ₂	CH ₂ =CHCH ₂
A-709	B-709	(2-CH ₃ O-Ph)CH ₂	CH ₂ =CHCH ₂
A-710	B-710	(3-CH ₃ O-Ph)CH ₂	CH ₂ =CHCH ₂
A-711	B-711	(4-CH ₃ O-Ph)CH ₂	CH ₂ =CHCH ₂
A-712	B-712	HO	CH ₂ =CHCH ₂
A-713	B-713	CH ₃ O	CH ₂ =CHCH ₂
A-714	B-714	CH ₃ CH ₂ O	CH ₂ =CHCH ₂
A-715	B-715	n-C ₃ H ₇ O	CH ₂ =CHCH ₂
A-716	B-716	iso-C ₃ H ₇ O	CH ₂ =CHCH ₂
A-717	B-717	CH ₂ =CHCH ₂ O	CH ₂ =CHCH ₂
A-718	B-718	CHCCH ₂ O	CH ₂ =CHCH ₂
A-719	B-719	PhCH ₂ O	CH ₂ =CHCH ₂
A-720	B-720	PhO	CH ₂ =CHCH ₂
A-721	B-721	NH ₂	CH ₂ =CHCH ₂
A-722	B-722	CH ₃ NH	CH ₂ =CHCH ₂
A-723	B-723	C ₂ H ₅ NH	CH ₂ =CHCH ₂
A-724	B-724	n-C ₃ H ₇ NH	CH ₂ =CHCH ₂
A-725	B-725	iso-C ₃ H ₇ NH	CH ₂ =CHCH ₂
A-726	B-726	PhCH ₂ NH	CH ₂ =CHCH ₂
A-727	B-727	PhNH	CH ₂ =CHCH ₂
A-728	B-728	2-Cl-PhNH	CH ₂ =CHCH ₂
A-729	B-729	3-Cl-PhNH	CH ₂ =CHCH ₂
A-730	B-730	4-Cl-PhNH	CH ₂ =CHCH ₂
A-731	B-731	2-CF ₃ -PhNH	CH ₂ =CHCH ₂
A-732	B-732	3-CF ₃ -PhNH	CH ₂ =CHCH ₂
A-733	B-733	2-CH ₃ O-PhNH	CH ₂ =CHCH ₂
A-734	B-734	3-CH ₃ O-PhNH	CH ₂ =CHCH ₂
A-735	B-735	4-CH ₃ O-PhNH	CH ₂ =CHCH ₂
A-736	B-736	Ph	CH ₂ =CHCH ₂
A-737	B-737	2-Cl-Ph	CH ₂ =CHCH ₂
A-738	B-738	3-Cl-Ph	CH ₂ =CHCH ₂
A-739	B-739	4-Cl-Ph	CH ₂ =CHCH ₂
A-740	B-740	2-CF ₃ -Ph	CH ₂ =CHCH ₂
A-741	B-741	3-CF ₃ -Ph	CH ₂ =CHCH ₂

Compound		R ³	R ⁴
A-742	B-742	4-CF ₃ -Ph	CH ₂ =CHCH ₂
A-743	B-743	2-CH ₃ O-Ph	CH ₂ =CHCH ₂
A-744	B-744	3-CH ₃ O-Ph	CH ₂ =CHCH ₂
A-745	B-745	4-CH ₃ O-Ph	CH ₂ =CHCH ₂
A-746	B-746	2-HO-Ph	CH ₂ =CHCH ₂
A-747	B-747	3-HO-Ph	CH ₂ =CHCH ₂
A-748	B-748	4-HO-Ph	CH ₂ =CHCH ₂
A-749	B-749	2-NH ₂ -Ph	CH ₂ =CHCH ₂
A-750	B-750	3-NH ₂ -Ph	CH ₂ =CHCH ₂
A-751	B-751	4-NH ₂ -Ph	CH ₂ =CHCH ₂
A-752	B-752	2-HOCH ₂ -Ph	CH ₂ =CHCH ₂
A-753	B-753	4-CF ₃ O-Ph	CH ₂ =CHCH ₂
A-754	B-754	4-CF ₃ CH ₂ O-Ph	CH ₂ =CHCH ₂
A-755	B-755	4-(4-Cl-PhO)-Ph	CH ₂ =CHCH ₂
A-756	B-756	4-(4-CF ₃ -PhO)-Ph	CH ₂ =CHCH ₂
A-757	B-757	2,3-diCl-Ph	CH ₂ =CHCH ₂
A-758	B-758	1-Pyrrolyl	CH ₂ =CHCH ₂
A-759	B-759	1-Pyrazolyl	CH ₂ =CHCH ₂
A-760	B-760	1,2,4-Triazol-1-yl	CH ₂ =CHCH ₂
A-761	B-761	2-Thiazolyl	CH ₂ =CHCH ₂
A-762	B-762	1,3,4-Thiadiazol-2-yl	CH ₂ =CHCH ₂
A-763	B-763	CH ₃ CO	CH ₂ =CHCH ₂
A-764	B-764	PhCO	CH ₂ =CHCH ₂
A-765	B-765	PhSO ₂ NH	CH ₂ =CHCH ₂
A-766	B-766	CF ₃ CH ₂	CH ₂ =CHCH ₂
A-767	B-767	ClCH ₂ CH ₂	CH ₂ =CHCH ₂
A-768	B-768	ClCH ₂ CH ₂ CH ₂	CH ₂ =CHCH ₂
A-769	B-769	CH ₃ OCH ₂ CH ₂	CH ₂ =CHCH ₂
A-770	B-770	CH ₃ CH ₂ OCH ₂ CH ₂	CH ₂ =CHCH ₂
A-771	B-771	CH ₃ OCH ₂ CH ₂ CH ₂	CH ₂ =CHCH ₂
A-772	B-772	C ₂ H ₅ OCH ₂ CH ₂ CH ₂	CH ₂ =CHCH ₂
A-773	B-773	n-C ₄ H ₉ OCH ₂ CH ₂ CH ₂	CH ₂ =CHCH ₂
A-774	B-774	(CH ₃ O) ₂ CHCH ₂	CH ₂ =CHCH ₂
A-775	B-775	CH ₃ CONH	CH ₂ =CHCH ₂
A-776	B-776	PhCONH	CH ₂ =CHCH ₂
A-777	B-777	HOCH ₂ CH ₂	CH ₂ =CHCH ₂
A-778	B-778	HOCH ₂ CH ₂ CH ₂	CH ₂ =CHCH ₂
A-779	B-779	CH ₃ O ₂ CCH ₂	CH ₂ =CHCH ₂
A-780	B-780	CH ₃ O ₂ CCH(CH ₃)	CH ₂ =CHCH ₂
A-781	B-781	NCCH ₂	CH ₂ =CHCH ₂
A-782	B-782	NC(CH ₃)(iso-C ₃ H ₇)C	PhCH ₂
A-783	B-783	CH ₂ =CHCH ₂	PhCH ₂
A-784	B-784	CHCCH ₂	PhCH ₂

Compound		R ³	R ⁴
A-785	B-785	CH ₃ CCCH ₂	PhCH ₂
A-786	B-786	(cyclo-C ₃ H ₅)CH ₂	PhCH ₂
A-787	B-787	PhCH ₂	PhCH ₂
A-788	B-788	PhCH ₂ CH ₂	PhCH ₂
A-789	B-789	(2-Cl-Ph)CH ₂	PhCH ₂
A-790	B-790	(3-Cl-Ph)CH ₂	PhCH ₂
A-791	B-791	(4-Cl-Ph)CH ₂	PhCH ₂
A-792	B-792	(2-CF ₃ -Ph)CH ₂	PhCH ₂
A-793	B-793	(3-CF ₃ -Ph)CH ₂	PhCH ₂
A-794	B-794	(4-CF ₃ -Ph)CH ₂	PhCH ₂
A-795	B-795	(2-CH ₃ O-Ph)CH ₂	PhCH ₂
A-796	B-796	(3-CH ₃ O-Ph)CH ₂	PhCH ₂
A-797	B-797	(4-CH ₃ O-Ph)CH ₂	PhCH ₂
A-798	B-798	HO	PhCH ₂
A-799	B-799	CH ₃ O	PhCH ₂
A-800	B-800	CH ₃ CH ₂ O	PhCH ₂
A-801	B-801	n-C ₃ H ₇ O	PhCH ₂
A-802	B-802	iso-C ₃ H ₇ O	PhCH ₂
A-803	B-803	CH ₂ =CHCH ₂ O	PhCH ₂
A-804	B-804	CHCCH ₂ O	PhCH ₂
A-805	B-805	PhCH ₂ O	PhCH ₂
A-806	B-806	PhO	PhCH ₂
A-807	B-807	NH ₂	PhCH ₂
A-808	B-808	CH ₃ NH	PhCH ₂
A-809	B-809	C ₂ H ₅ NH	PhCH ₂
A-810	B-810	n-C ₃ H ₇ NH	PhCH ₂
A-811	B-811	iso-C ₃ H ₇ NH	PhCH ₂
A-812	B-812	PhCH ₂ NH	PhCH ₂
A-813	B-813	PhNH	PhCH ₂
A-814	B-814	2-Cl-PhNH	PhCH ₂
A-815	B-815	3-Cl-PhNH	PhCH ₂
A-816	B-816	4-Cl-PhNH	PhCH ₂
A-817	B-817	2-CF ₃ -PhNH	PhCH ₂
A-818	B-818	3-CF ₃ -PhNH	PhCH ₂
A-819	B-819	2-CH ₃ O-PhNH	PhCH ₂
A-820	B-820	3-CH ₃ O-PhNH	PhCH ₂
A-821	B-821	4-CH ₃ O-PhNH	PhCH ₂
A-822	B-822	Ph	PhCH ₂
A-823	B-823	2-Cl-Ph	PhCH ₂
A-824	B-824	3-Cl-Ph	PhCH ₂
A-825	B-825	4-Cl-Ph	PhCH ₂
A-826	B-826	2-CF ₃ -Ph	PhCH ₂
A-827	B-827	3-CF ₃ -Ph	PhCH ₂

Compound		R ³	R ⁴
A-828	B-828	4-CF ₃ -Ph	PhCH ₂
A-829	B-829	2-CH ₃ O-Ph	PhCH ₂
A-830	B-830	3-CH ₃ O-Ph	PhCH ₂
A-831	B-831	4-CH ₃ O-Ph	PhCH ₂
A-832	B-832	2-HO-Ph	PhCH ₂
A-833	B-833	3-HO-Ph	PhCH ₂
A-834	B-834	4-HO-Ph	PhCH ₂
A-835	B-835	2-NH ₂ -Ph	PhCH ₂
A-836	B-836	3-NH ₂ -Ph	PhCH ₂
A-837	B-837	4-NH ₂ -Ph	PhCH ₂
A-838	B-838	2-HOCH ₂ -Ph	PhCH ₂
A-839	B-839	4-CF ₃ O-Ph	PhCH ₂
A-840	B-840	4-CF ₃ CH ₂ O-Ph	PhCH ₂
A-841	B-841	4-(4-Cl-PhO)-Ph	PhCH ₂
A-842	B-842	4-(4-CF ₃ -PhO)-Ph	PhCH ₂
A-843	B-843	2,3-diCl-Ph	PhCH ₂
A-844	B-844	1-Pyrrolyl	PhCH ₂
A-845	B-845	1-Pyrazolyl	PhCH ₂
A-846	B-846	1,2,4-Triazol-1-yl	PhCH ₂
A-847	B-847	2-Thiazolyl	PhCH ₂
A-848	B-848	1,3,4-Thiadiazol-2-yl	PhCH ₂
A-849	B-849	CH ₃ CO	PhCH ₂
A-850	B-850	PhCO	PhCH ₂
A-851	B-851	PhSO ₂ NH	PhCH ₂
A-852	B-852	CF ₃ CH ₂	PhCH ₂
A-853	B-853	ClCH ₂ CH ₂	PhCH ₂
A-854	B-854	ClCH ₂ CH ₂ CH ₂	PhCH ₂
A-855	B-855	CH ₃ OCH ₂ CH ₂	PhCH ₂
A-856	B-856	CH ₃ CH ₂ OCH ₂ CH ₂	PhCH ₂
A-857	B-857	CH ₃ OCH ₂ CH ₂ CH ₂	PhCH ₂
A-858	B-858	C ₂ H ₅ OCH ₂ CH ₂ CH ₂	PhCH ₂
A-859	B-859	n-C ₄ H ₉ OCH ₂ CH ₂ CH ₂	PhCH ₂
A-860	B-860	(CH ₃ O) ₂ CHCH ₂	PhCH ₂
A-861	B-861	CH(CH ₃)CH ₂ CH ₂ CH ₂ CH ₂	
A-862	B-862	HOCH ₂ CH ₂	PhCH ₂
A-863	B-863	CH ₂ CHBrCH ₂ CH ₂	
A-864	B-864	CH ₂ CH(OH)CH ₂ CH ₂	
A-865	B-865	CH ₂ CH=CHCH ₂	
A-866	B-866	benzothiazol-2-yl	H
A-867	B-867	Ph	Ph
A-868	B-868	CH ₃ CONH	Ph
A-869	B-869	HOCH ₂ CH ₂	Ph
A-870	B-870	CH ₃ SO ₂ OCH ₂ CH ₂ CH ₂ CH ₂	H

Compound		R ³	R ⁴
A-871	B-871	CH ₂ CH ₂ CH ₂ CH ₂	
A-872	B-872	CH ₂ CH ₂ CH ₂ CH ₂ CH ₂	
A-873	B-873	CH ₂ CH ₂ OCH ₂ CH ₂	
A-874	B-874	CH ₂ CH ₂ SCH ₂ CH ₂	
A-875	B-875	CH ₂ CH ₂ NHCH ₂ CH ₂	
A-876	B-876	CH ₂ CH ₂ N(CH ₃)CH ₂ CH ₂	
A-877	B-877	N=CHCH ₂ CH ₂	
A-878	B-878	Ph	NH ₂
A-879	B-879	PhCH ₂	(CH ₃) ₂ C=N
A-880	B-880	Ph	(CH ₃) ₂ C=N
A-881	B-881	PhCH ₂	H

Table 2

- Compounds of formula (I) in which R¹ is -C(=U)NR³R⁴; U is O, m is zero and R² is as defined hereafter. In Table 2 compounds C-1 to C-151 represent individual
- 5 compounds in which R² is methyl; compounds D-1 to D-151 represent individual compounds in which R² is ethyl; compounds E-1 to E-151 represent individual compounds in which R² is allyl; compounds F-1 to F-151 represent individual compounds in which R² is propargyl; compounds G-1 to G-151 represent individual compounds in which R² is benzyl; compounds H-1 to H-151 represent individual
- 10 compounds in which R² is -CH₂CO₂CH₃; compounds I-1 to I-151 represent individual compounds in which R² is -CH(CH₃)CO₂CH₃; compounds J-1 to J-151 represent individual compounds in which R² is -CH₂CH(OCH₃)₂.

Compound										R ³		R ⁴
D-1	E-1	F-1	G-1	H-1	I-1	J-1					CH ₂ =CHCH ₂	H
C-1	D-1	E-1	F-1	G-1	H-1	I-1	J-1					H
C-2	D-2	E-2	F-2	G-2	H-2	I-2	J-2					H
C-3	D-3	E-3	F-3	G-3	H-3	I-3	J-3					H
C-4	D-4	E-4	F-4	G-4	H-4	I-4	J-4					H
C-5	D-5	E-5	F-5	G-5	H-5	I-5	J-5					H
C-6	D-6	E-6	F-6	G-6	H-6	I-6	J-6					H
C-7	D-7	E-7	F-7	G-7	H-7	I-7	J-7					H
C-8	D-8	E-8	F-8	G-8	H-8	I-8	J-8					H
C-9	D-9	E-9	F-9	G-9	H-9	I-9	J-9					H
C-10	D-10	E-10	F-10	G-10	H-10	I-10	J-10					H
C-11	D-11	E-11	F-11	G-11	H-11	I-11	J-11					H
C-12	D-12	E-12	F-12	G-12	H-12	I-12	J-12					H
C-13	D-13	E-13	F-13	G-13	H-13	I-13	J-13					H
C-14	D-14	E-14	F-14	G-14	H-14	I-14	J-14					H
C-15	D-15	E-15	F-15	G-15	H-15	I-15	J-15					H
C-16	D-16	E-16	F-16	G-16	H-16	I-16	J-16					H
C-17	D-17	E-17	F-17	G-17	H-17	I-17	J-17					H
C-18	D-18	E-18	F-18	G-18	H-18	I-18	J-18					H
C-19	D-19	E-19	F-19	G-19	H-19	I-19	J-19					H
C-20	D-20	E-20	F-20	G-20	H-20	I-20	J-20					H
C-21	D-21	E-21	F-21	G-21	H-21	I-21	J-21					H
C-22	D-22	E-22	F-22	G-22	H-22	I-22	J-22					H
C-23	D-23	E-23	F-23	G-23	H-23	I-23	J-23					H
C-24	D-24	E-24	F-24	G-24	H-24	I-24	J-24					H
C-25	D-25	E-25	F-25	G-25	H-25	I-25	J-25					H

Compound										R ³	R ⁴
C-26	D-26	E-26	F-26	G-26	H-26	I-26	J-26	n-C3H7O		H	H
C-27	D-27	E-27	F-27	G-27	H-27	I-27	J-27	iso-C3H7O		H	H
C-28	D-28	E-28	F-28	G-28	H-28	I-28	J-28	n-C4H9O		H	H
C-29	D-29	E-29	F-29	G-29	H-29	I-29	J-29	tert-C4H9O		H	H
C-30	D-30	E-30	F-30	G-30	H-30	I-30	J-30	CH ₂ =CHCH ₂ O		H	H
C-31	D-31	E-31	F-31	G-31	H-31	I-31	J-31	CHCCH ₂ O		H	H
C-32	D-32	E-32	F-32	G-32	H-32	I-32	J-32	CH ₃ O ₂ CCCH ₂ O		H	H
C-33	D-33	E-33	F-33	G-33	H-33	I-33	J-33	CH ₃ O ₂ CCCH(CH ₃)O		H	H
C-34	D-34	E-34	F-34	G-34	H-34	I-34	J-34	CH ₃ O ₂ CCC(CH ₃) ₂ O		H	H
C-35	D-35	E-35	F-35	G-35	H-35	I-35	J-35	PhCH ₂ O		H	H
C-36	D-36	E-36	F-36	G-36	H-36	I-36	J-36	Ph		H	H
C-37	D-37	E-37	F-37	G-37	H-37	I-37	J-37	2-F-Ph		H	H
C-38	D-38	E-38	F-38	G-38	H-38	I-38	J-38	3-F-Ph		H	H
C-39	D-39	E-39	F-39	G-39	H-39	I-39	J-39	4-F-Ph		H	H
C-40	D-40	E-40	F-40	G-40	H-40	I-40	J-40	2-Cl-Ph		H	H
C-41	D-41	E-41	F-41	G-41	H-41	I-41	J-41	3-Cl-Ph		H	H
C-42	D-42	E-42	F-42	G-42	H-42	I-42	J-42	4-Cl-Ph		H	H
C-43	D-43	E-43	F-43	G-43	H-43	I-43	J-43	2-CF ₃ -Ph		H	H
C-44	D-44	E-44	F-44	G-44	H-44	I-44	J-44	3-CF ₃ -Ph		H	H
C-45	D-45	E-45	F-45	G-45	H-45	I-45	J-45	4-CF ₃ -Ph		H	H
C-46	D-46	E-46	F-46	G-46	H-46	I-46	J-46	2-CH ₃ -Ph		H	H
C-47	D-47	E-47	F-47	G-47	H-47	I-47	J-47	3-CH ₃ -Ph		H	H
C-48	D-48	E-48	F-48	G-48	H-48	I-48	J-48	4-CH ₃ -Ph		H	H
C-49	D-49	E-49	F-49	G-49	H-49	I-49	J-49	2-CH ₃ O-Ph		H	H
C-50	D-50	E-50	F-50	G-50	H-50	I-50	J-50	3-CH ₃ O-Ph		H	H
C-51	D-51	E-51	F-51	G-51	H-51	I-51	J-51	4-CH ₃ O-Ph		H	H

Compound										R ³	R ⁴
C-52	D-52	E-52	F-52	G-52	H-52	I-52	J-52	4-CF ₃ O-Ph		H	H
C-53	D-53	E-53	F-53	G-53	H-53	I-53	J-53	4-CF ₃ CH ₂ O-Ph		H	H
C-54	D-54	E-54	F-54	G-54	H-54	I-54	J-54	4-PhO-Ph		H	H
C-55	D-55	E-55	F-55	G-55	H-55	I-55	J-55	4-(4-Cl-PhO)-Ph		H	H
C-56	D-56	E-56	F-56	G-56	H-56	I-56	J-56	4-(4-CF ₃ -PhO)-Ph		H	H
C-57	D-57	E-57	F-57	G-57	H-57	I-57	J-57	CF ₃ CH ₂		H	H
C-58	D-58	E-58	F-58	G-58	H-58	I-58	J-58	ClCH ₂ CH ₂		H	H
C-59	D-59	E-59	F-59	G-59	H-59	I-59	J-59	ClCH ₂ CH ₂ CH ₂		H	H
C-60	D-60	E-60	F-60	G-60	H-60	I-60	J-60	CH ₃ OCH ₂ CH ₂		H	H
C-61	D-61	E-61	F-61	G-61	H-61	I-61	J-61	CH ₃ CH ₂ OCH ₂ CH ₂		H	H
C-62	D-62	E-62	F-62	G-62	H-62	I-62	J-62	CH ₃ OCH ₂ CH ₂ CH ₂		H	H
C-63	D-63	E-63	F-63	G-63	H-63	I-63	J-63	C ₂ H ₅ OCH ₂ CH ₂ CH ₂		H	H
C-64	D-64	E-64	F-64	G-64	H-64	I-64	J-64	n-C ₄ H ₉ OCH ₂ CH ₂ CH ₂		H	H
C-65	D-65	E-65	F-65	G-65	H-65	I-65	J-65	CH ₃ OCH(CH ₃)CH ₂ CH ₂		H	H
C-66	D-66	E-66	F-66	G-66	H-66	I-66	J-66	(CH ₃ O) ₂ CHCH ₂		H	H
C-67	D-67	E-67	F-67	G-67	H-67	I-67	J-67	HOCH ₂ CH ₂		H	H
C-68	D-68	E-68	F-68	G-68	H-68	I-68	J-68	HOCH ₂ CH ₂ CH ₂		H	H
C-69	D-69	E-69	F-69	G-69	H-69	I-69	J-69	CH ₃ SCH ₂ CH ₂		H	H
C-70	D-70	E-70	F-70	G-70	H-70	I-70	J-70	CH ₃ CH ₂ SCH ₂ CH ₂		H	H
C-71	D-71	E-71	F-71	G-71	H-71	I-71	J-71	CH ₃ SCH ₂ CH ₂ CH ₂		H	H
C-72	D-72	E-72	F-72	G-72	H-72	I-72	J-72	C ₂ H ₅ SCH ₂ CH ₂ CH ₂		H	H
C-73	D-73	E-73	F-73	G-73	H-73	I-73	J-73	CH ₂ =CHCH ₂		CH ₃	CH ₃
C-74	D-74	E-74	F-74	G-74	H-74	I-74	J-74	CHCCH ₂		CH ₃	CH ₃
C-75	D-75	E-75	F-75	G-75	H-75	I-75	J-75	cyclo-C ₃ H ₅		CH ₃	CH ₃
C-76	D-76	E-76	F-76	G-76	H-76	I-76	J-76	cyclo-C ₅ H ₉		CH ₃	CH ₃
C-77	D-77	E-77	F-77	G-77	H-77	I-77	J-77	cyclo-C ₆ H ₁₁		CH ₃	CH ₃

Compound										R ³	R ⁴
C-78	D-78	E-78	F-78	G-78	H-78	I-78	J-78			PhCH ₂	CH ₃
C-79	D-79	E-79	F-79	G-79	H-79	I-79	J-79			NH ₂	CH ₃
C-80	D-80	E-80	F-80	G-80	H-80	I-80	J-80			CH ₃ NH	CH ₃
C-81	D-81	E-81	F-81	G-81	H-81	I-81	J-81			C ₂ H ₅ NH	CH ₃
C-82	D-82	E-82	F-82	G-82	H-82	I-82	J-82			PhCH ₂ NH	CH ₃
C-83	D-83	E-83	F-83	G-83	H-83	I-83	J-83			PhNH	CH ₃
C-84	D-84	E-84	F-84	G-84	H-84	I-84	J-84			HO	CH ₃
C-85	D-85	E-85	F-85	G-85	H-85	I-85	J-85			CH ₃ O	CH ₃
C-86	D-86	E-86	F-86	G-86	H-86	I-86	J-86			C ₂ H ₅ O	CH ₃
C-87	D-87	E-87	F-87	G-87	H-87	I-87	J-87			CH ₂ =CHCH ₂ O	CH ₃
C-88	D-88	E-88	F-88	G-88	H-88	I-88	J-88			CHCCH ₂ O	CH ₃
C-89	D-89	E-89	F-89	G-89	H-89	I-89	J-89			CH ₃ O ₂ CCH ₂ O	CH ₃
C-90	D-90	E-90	F-90	G-90	H-90	I-90	J-90			CH ₃ O ₂ CCH(CH ₃)O	CH ₃
C-91	D-91	E-91	F-91	G-91	H-91	I-91	J-91			PhCH ₂ O	CH ₃
C-92	D-92	E-92	F-92	G-92	H-92	I-92	J-92			Ph	CH ₃
C-93	D-93	E-93	F-93	G-93	H-93	I-93	J-93			4-CF ₃ O-Ph	CH ₃
C-94	D-94	E-94	F-94	G-94	H-94	I-94	J-94			4-(4-CF ₃ O)-Ph	CH ₃
C-95	D-95	E-95	F-95	G-95	H-95	I-95	J-95			CF ₃ CH ₂	CH ₃
C-96	D-96	E-96	F-96	G-96	H-96	I-96	J-96			CH ₃ OCH ₂ CH ₂	CH ₃
C-97	D-97	E-97	F-97	G-97	H-97	I-97	J-97			CH ₃ CH ₂ OCH ₂ CH ₂	CH ₃
C-98	D-98	E-98	F-98	G-98	H-98	I-98	J-98			CH ₃ OCH ₂ CH ₂ CH ₂	CH ₃
C-99	D-99	E-99	F-99	G-99	H-99	I-99	J-99			C ₂ H ₅ OCH ₂ CH ₂ CH ₂	CH ₃
C-100	D-100	E-100	F-100	G-100	H-100	I-100	J-100			n-C ₄ H ₉ OCH ₂ CH ₂ CH ₂	CH ₃
C-101	D-101	E-101	F-101	G-101	H-101	I-101	J-101			(CH ₃ O) ₂ CHCH ₂	CH ₃
C-102	D-102	E-102	F-102	G-102	H-102	I-102	J-102			HOCH ₂ CH ₂	CH ₃
C-103	D-103	E-103	F-103	G-103	H-103	I-103	J-103			HOCH ₂ CH ₂ CH ₂	CH ₃

Compound										R ³	R ⁴
C-104	D-104	E-104	F-104	G-104	H-104	I-104	J-104	CH ₃ OCH ₂ CH ₂ CH ₂		CH ₃	CH ₃
C-105	D-105	E-105	F-105	G-105	H-105	I-105	J-105	C ₂ H ₅ OCH ₂ CH ₂ CH ₂		CH ₃	CH ₃
C-106	D-106	E-106	F-106	G-106	H-106	I-106	J-106	n-C ₄ H ₉ OCH ₂ CH ₂ CH ₂		CH ₃	CH ₃
C-107	D-107	E-107	F-107	G-107	H-107	I-107	J-107	(CH ₃ O) ₂ CHCH ₂		CH ₃	CH ₃
C-108	D-108	E-108	F-108	G-108	H-108	I-108	J-108	HOCH ₂ CH ₂		CH ₃	CH ₃
C-109	D-109	E-109	F-109	G-109	H-109	I-109	J-109	HOCH ₂ CH ₂ CH ₂		CH ₃	CH ₃
C-110	D-110	E-110	F-110	G-110	H-110	I-110	J-110	CH ₂ =CHCH ₂		PhCH ₂	PhCH ₂
C-111	D-111	E-111	F-111	G-111	H-111	I-111	J-111	CHCCH ₂		PhCH ₂	PhCH ₂
C-112	D-112	E-112	F-112	G-112	H-112	I-112	J-112	cyclo-C ₃ H ₅		PhCH ₂	PhCH ₂
C-113	D-113	E-113	F-113	G-113	H-113	I-113	J-113	cyclo-C ₅ H ₉		PhCH ₂	PhCH ₂
C-114	D-114	E-114	F-114	G-114	H-114	I-114	J-114	cyclo-C ₆ H ₁₁		PhCH ₂	PhCH ₂
C-115	D-115	E-115	F-115	G-115	H-115	I-115	J-115	NH ₂		PhCH ₂	PhCH ₂
C-116	D-116	E-116	F-116	G-116	H-116	I-116	J-116	CH ₃ NH		PhCH ₂	PhCH ₂
C-117	D-117	E-117	F-117	G-117	H-117	I-117	J-117	C ₂ H ₅ NH		PhCH ₂	PhCH ₂
C-118	D-118	E-118	F-118	G-118	H-118	I-118	J-118	PhNH		PhCH ₂	PhCH ₂
C-119	D-119	E-119	F-119	G-119	H-119	I-119	J-119	HO		PhCH ₂	PhCH ₂
C-120	D-120	E-120	F-120	G-120	H-120	I-120	J-120	CH ₃ O		PhCH ₂	PhCH ₂
C-121	D-121	E-121	F-121	G-121	H-121	I-121	J-121	C ₂ H ₅ O		PhCH ₂	PhCH ₂
C-122	D-122	E-122	F-122	G-122	H-122	I-122	J-122	CH ₂ =CHCH ₂ O		PhCH ₂	PhCH ₂
C-123	D-123	E-123	F-123	G-123	H-123	I-123	J-123	CHCCH ₂ O		PhCH ₂	PhCH ₂
C-124	D-124	E-124	F-124	G-124	H-124	I-124	J-124	CH ₃ O ₂ CCCH ₂ O		PhCH ₂	PhCH ₂
C-125	D-125	E-125	F-125	G-125	H-125	I-125	J-125	CH ₃ O ₂ CCCH(CH ₃)O		PhCH ₂	PhCH ₂
C-126	D-126	E-126	F-126	G-126	H-126	I-126	J-126	PhCH ₂ O		PhCH ₂	PhCH ₂
C-127	D-127	E-127	F-127	G-127	H-127	I-127	J-127	Ph		PhCH ₂	PhCH ₂
C-128	D-128	E-128	F-128	G-128	H-128	I-128	J-128	4-CF ₃ O-Ph		PhCH ₂	PhCH ₂
C-129	D-129	E-129	F-129	G-129	H-129	I-129	J-129	4-(4-CF ₃ O)-Ph		PhCH ₂	PhCH ₂

Compound										R ³	R ⁴
C-130	D-130	E-130	F-130	G-130	H-130	I-130	J-130			CF ₃ CH ₂	PhCH ₂
C-131	D-131	E-131	F-131	G-131	H-131	I-131	J-131			CH ₃ OCH ₂ CH ₂	PhCH ₂
C-132	D-132	E-132	F-132	G-132	H-132	I-132	J-132			CH ₃ CH ₂ OCH ₂ CH ₂	PhCH ₂
C-133	D-133	E-133	F-133	G-133	H-133	I-133	J-133			CH ₃ OCH ₂ CH ₂ CH ₂	PhCH ₂
C-134	D-134	E-134	F-134	G-134	H-134	I-134	J-134			C ₂ H ₅ OCH ₂ CH ₂ CH ₂	PhCH ₂
C-135	D-135	E-135	F-135	G-135	H-135	I-135	J-135			n-C ₄ H ₉ OCH ₂ CH ₂ CH ₂	PhCH ₂
C-136	D-136	E-136	F-136	G-136	H-136	I-136	J-136			(CH ₃ O) ₂ CHCH ₂	PhCH ₂
C-137	D-137	E-137	F-137	G-137	H-137	I-137	J-137			HOCH ₂ CH ₂	PhCH ₂
C-138	D-138	E-138	F-138	G-138	H-138	I-138	J-138			HOCH ₂ CH ₂ CH ₂	PhCH ₂
C-139	D-139	E-139	F-139	G-139	H-139	I-139	J-139			CH ₃ OCH ₂ CH ₂ CH ₂	PhCH ₂
C-140	D-140	E-140	F-140	G-140	H-140	I-140	J-140			C ₂ H ₅ OCH ₂ CH ₂ CH ₂	PhCH ₂
C-141	D-141	E-141	F-141	G-141	H-141	I-141	J-141			n-C ₄ H ₉ OCH ₂ CH ₂ CH ₂	PhCH ₂
C-142	D-142	E-142	F-142	G-142	H-142	I-142	J-142			(CH ₃ O) ₂ CHCH ₂	PhCH ₂
C-143	D-143	E-143	F-143	G-143	H-143	I-143	J-143			HOCH ₂ CH ₂	PhCH ₂
C-144	D-144	E-144	F-144	G-144	H-144	I-144	J-144			HOCH ₂ CH ₂ CH ₂	PhCH ₂
C-145	D-145	E-145	F-145	G-145	H-145	I-145	J-145			CH ₂ CH ₂ CH ₂ CH ₂	
C-146	D-146	E-146	F-146	G-146	H-146	I-146	J-146			CH ₂ CH ₂ CH ₂ CH ₂ CH ₂	
C-147	D-147	E-147	F-147	G-147	H-147	I-147	J-147			CH ₂ CH ₂ OCH ₂ CH ₂	
C-148	D-148	E-148	F-148	G-148	H-148	I-148	J-148			CH ₂ CH ₂ SOCH ₂ CH ₂	
C-149	D-149	E-149	F-149	G-149	H-149	I-149	J-149			CH ₂ CH ₂ NHCH ₂ CH ₂	
C-150	D-150	E-150	F-150	G-150	H-150	I-150	J-150			CH ₂ CH ₂ N(CH ₃)CH ₂ CH ₂	
C-151	D-151	E-151	F-151	G-151	H-151	I-151	J-151			N=CHCH ₂ CH ₂	

Table 3

Compounds of formula (I) in which R^1 is $-C(=U)NR^3R^4$; U is S and m is zero. In

Table 3 compounds K-1 to K-151 represent individual compounds in which R^2 is

5 methyl; compounds L-1 to L-151 represent individual compounds in which R^2 is ethyl;

compounds M-1 to M-151 represent individual compounds in which R^2 is allyl;

compounds N-1 to N-151 represent individual compounds in which R^2 is propargyl;

compounds O-1 to O-151 represent individual compounds in which R^2 is benzyl;

compounds P-1 to P-151 represent individual compounds in which R^2 is

10 $-CH_2CO_2CH_3$; compounds Q-1 to Q-151 represent individual compounds in which

R^2 is $-CH(CH_3)CO_2CH_3$; compounds R-1 to R-151 represent individual compounds

in which R^2 is $-CH_2CH(OCH_3)_2$.

Compound										R ³	R ⁴
K-1	L-1	M-1	N-1	O-1	P-1	Q-1	R-1	CH ₂ =CHCH ₂		H	H
K-2	L-2	M-2	N-2	O-2	P-2	Q-2	R-2	CH ₃ CH=CHCH ₂		H	H
K-3	L-3	M-3	N-3	O-3	P-3	Q-3	R-3	CH ₂ =CHCH ₂ CH ₂		H	H
K-4	L-4	M-4	N-4	O-4	P-4	Q-4	R-4	CHCCH ₂		H	H
K-5	L-5	M-5	N-5	O-5	P-5	Q-1	R-5	CH ₃ CCCH ₂		H	H
K-6	L-6	M-6	N-6	O-6	P-6	Q-2	R-6	CHCCH(CH ₃)		H	H
K-7	L-7	M-7	N-7	O-7	P-7	Q-3	R-7	cyclo-C ₃ H ₅		H	H
K-8	L-8	M-8	N-8	O-8	P-8	Q-4	R-8	cyclo-C ₅ H ₉		H	H
K-9	L-9	M-9	N-9	O-9	P-9	Q-1	R-9	cyclo-C ₆ H ₁₁		H	H
K-10	L-10	M-10	N-10	O-10	P-10	Q-2	R-10	PhCH ₂		H	H
K-11	L-11	M-11	N-11	O-11	P-11	Q-3	R-11	PhCH(CH ₃)		H	H
K-12	L-12	M-12	N-12	O-12	P-12	Q-4	R-12	NH ₂		H	H
K-13	L-13	M-13	N-13	O-13	P-13	Q-1	R-13	CH ₃ NH		H	H
K-14	L-14	M-14	N-14	O-14	P-14	Q-2	R-14	C ₂ H ₅ NH		H	H
K-15	L-15	M-15	N-15	O-15	P-15	Q-3	R-15	n-C ₃ H ₇ NH		H	H
K-16	L-16	M-16	N-16	O-16	P-16	Q-4	R-16	iso-C ₃ H ₇ NH		H	H
K-17	L-17	M-17	N-17	O-17	P-17	Q-1	R-17	n-C ₄ H ₉ NH		H	H
K-18	L-18	M-18	N-18	O-18	P-18	Q-2	R-18	tert-C ₄ H ₉ NH		H	H
K-19	L-19	M-19	N-19	O-19	P-19	Q-3	R-19	n-C ₅ H ₁₁ NH		H	H
K-20	L-20	M-20	N-20	O-20	P-20	Q-4	R-20	n-C ₆ H ₁₃ NH		H	H
K-21	L-21	M-21	N-21	O-21	P-21	Q-1	R-21	PhCH ₂ NH		H	H
K-22	L-22	M-22	N-22	O-22	P-22	Q-2	R-22	PhNH		H	H
K-23	L-23	M-23	N-23	O-23	P-23	Q-3	R-23	HO		H	H
K-24	L-24	M-24	N-24	O-24	P-24	Q-4	R-24	CH ₃ O		H	H
K-25	L-25	M-25	N-25	O-25	P-25	Q-1	R-25	C ₂ H ₅ O		H	H

Compound										R ³	R ⁴
K-26	L-26	M-26	N-26	O-26	P-26	Q-2	R-26	n-C3H7O	H		
K-27	L-27	M-27	N-27	O-27	P-27	Q-3	R-27	iso-C3H7O	H		
K-28	L-28	M-28	N-28	O-28	P-28	Q-4	R-28	n-C4H9O	H		
K-29	L-29	M-29	N-29	O-29	P-29	Q-1	R-29	tert-C4H9O	H		
K-30	L-30	M-30	N-30	O-30	P-30	Q-2	R-30	CH2=CHCH2O	H		
K-31	L-31	M-31	N-31	O-31	P-31	Q-3	R-31	CHCCH2O	H		
K-32	L-32	M-32	N-32	O-32	P-32	Q-4	R-32	CH3O2CCH2O	H		
K-33	L-33	M-33	N-33	O-33	P-33	Q-1	R-33	CH3O2CCH(CH3)O	H		
K-34	L-34	M-34	N-34	O-34	P-34	Q-2	R-34	CH3O2CC(CH3)2O	H		
K-35	L-35	M-35	N-35	O-35	P-35	Q-3	R-35	PhCH2O	H		
K-36	L-36	M-36	N-36	O-36	P-36	Q-4	R-36	Ph	H		
K-37	L-37	M-37	N-37	O-37	P-37	Q-1	R-37	2-F-Ph	H		
K-38	L-38	M-38	N-38	O-38	P-38	Q-2	R-38	3-F-Ph	H		
K-39	L-39	M-39	N-39	O-39	P-39	Q-3	R-39	4-F-Ph	H		
K-40	L-40	M-40	N-40	O-40	P-40	Q-4	R-40	2-Cl-Ph	H		
K-41	L-41	M-41	N-41	O-41	P-41	Q-1	R-41	3-Cl-Ph	H		
K-42	L-42	M-42	N-42	O-42	P-42	Q-2	R-42	4-Cl-Ph	H		
K-43	L-43	M-43	N-43	O-43	P-43	Q-3	R-43	2-CF3-Ph	H		
K-44	L-44	M-44	N-44	O-44	P-44	Q-4	R-44	3-CF3-Ph	H		
K-45	L-45	M-45	N-45	O-45	P-45	Q-1	R-45	4-CF3-Ph	H		
K-46	L-46	M-46	N-46	O-46	P-46	Q-2	R-46	2-CH3-Ph	H		
K-47	L-47	M-47	N-47	O-47	P-47	Q-3	R-47	3-CH3-Ph	H		
K-48	L-48	M-48	N-48	O-48	P-48	Q-4	R-48	4-CH3-Ph	H		
K-49	L-49	M-49	N-49	O-49	P-49	Q-1	R-49	2-CH3O-Ph	H		
K-50	L-50	M-50	N-50	O-50	P-50	Q-2	R-50	3-CH3O-Ph	H		
K-51	L-51	M-51	N-51	O-51	P-51	Q-3	R-51	4-CH3O-Ph	H		

Compound										R ³	R ⁴
K-52	L-52	M-52	N-52	O-52	P-52	Q-4	R-52	4-CF ₃ O-Ph		H	H
K-53	L-53	M-53	N-53	O-53	P-53	Q-1	R-53	4-CF ₃ CH ₂ O-Ph		H	H
K-54	L-54	M-54	N-54	O-54	P-54	Q-2	R-54	4-PhO-Ph		H	H
K-55	L-55	M-55	N-55	O-55	P-55	Q-3	R-55	4-(4-Cl-PhO)-Ph		H	H
K-56	L-56	M-56	N-56	O-56	P-56	Q-4	R-56	4-(4-CF ₃ -PhO)-Ph		H	H
K-57	L-57	M-57	N-57	O-57	P-57	Q-1	R-57	CF ₃ CH ₂		H	H
K-58	L-58	M-58	N-58	O-58	P-58	Q-2	R-58	ClCH ₂ CH ₂		H	H
K-59	L-59	M-59	N-59	O-59	P-59	Q-3	R-59	ClCH ₂ CH ₂ CH ₂		H	H
K-60	L-60	M-60	N-60	O-60	P-60	Q-4	R-60	CH ₃ OCH ₂ CH ₂		H	H
K-61	L-61	M-61	N-61	O-61	P-61	Q-1	R-61	CH ₃ CH ₂ OCH ₂ CH ₂		H	H
K-62	L-62	M-62	N-62	O-62	P-62	Q-2	R-62	CH ₃ OCH ₂ CH ₂ CH ₂		H	H
K-63	L-63	M-63	N-63	O-63	P-63	Q-3	R-63	C ₂ H ₅ OCH ₂ CH ₂ CH ₂		H	H
K-64	L-64	M-64	N-64	O-64	P-64	Q-4	R-64	n-C ₄ H ₉ OCH ₂ CH ₂ CH ₂		H	H
K-65	L-65	M-65	N-65	O-65	P-65	Q-1	R-65	CH ₃ OCH(CH ₃)CH ₂ CH ₂		H	H
K-66	L-66	M-66	N-66	O-66	P-66	Q-2	R-66	(CH ₃ O) ₂ CHCH ₂		H	H
K-67	L-67	M-67	N-67	O-67	P-67	Q-3	R-67	HOCH ₂ CH ₂		H	H
K-68	L-68	M-68	N-68	O-68	P-68	Q-4	R-68	HOCH ₂ CH ₂ CH ₂		H	H
K-69	L-69	M-69	N-69	O-69	P-69	Q-1	R-69	CH ₃ SCH ₂ CH ₂		H	H
K-70	L-70	M-70	N-70	O-70	P-70	Q-2	R-70	CH ₃ CH ₂ SCCH ₂ CH ₂		H	H
K-71	L-71	M-71	N-71	O-71	P-71	Q-3	R-71	CH ₃ SCH ₂ CH ₂ CH ₂		H	H
K-72	L-72	M-72	N-72	O-72	P-72	Q-4	R-72	C ₂ H ₅ SCH ₂ CH ₂ CH ₂		H	H
K-73	L-73	M-73	N-73	O-73	P-73	Q-1	R-73	CH ₂ =CHCH ₂		CH ₃	CH ₃
K-74	L-74	M-74	N-74	O-74	P-74	Q-2	R-74	CHCCH ₂		CH ₃	CH ₃
K-75	L-75	M-75	N-75	O-75	P-75	Q-3	R-75	cyclo-C ₃ H ₅		CH ₃	CH ₃
K-76	L-76	M-76	N-76	O-76	P-76	Q-4	R-76	cyclo-C ₅ H ₉		CH ₃	CH ₃
K-77	L-77	M-77	N-77	O-77	P-77	Q-1	R-77	cyclo-C ₆ H ₁₁		CH ₃	CH ₃

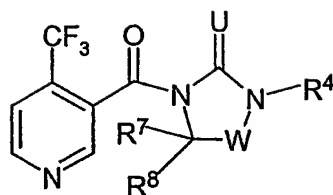
Compound								R ³	R ⁴
K-78	L-78	M-78	N-78	O-78	P-78	Q-2	R-78	PhCH2	CH3
K-79	L-79	M-79	N-79	O-79	P-79	Q-3	R-79	NH2	CH3
K-80	L-80	M-80	N-80	O-80	P-80	Q-4	R-80	CH3NH	CH3
K-81	L-81	M-81	N-81	O-81	P-81	Q-1	R-81	C2H5NH	CH3
K-82	L-82	M-82	N-82	O-82	P-82	Q-2	R-82	PhCH2NH	CH3
K-83	L-83	M-83	N-83	O-83	P-83	Q-3	R-83	PhNH	CH3
K-84	L-84	M-84	N-84	O-84	P-84	Q-4	R-84	HO	CH3
K-85	L-85	M-85	N-85	O-85	P-85	Q-1	R-85	CH3O	CH3
K-86	L-86	M-86	N-86	O-86	P-86	Q-2	R-86	C2H5O	CH3
K-87	L-87	M-87	N-87	O-87	P-87	Q-3	R-87	CH2=CHCH2O	CH3
K-88	L-88	M-88	N-88	O-88	P-88	Q-4	R-88	CHCCH2O	CH3
K-89	L-89	M-89	N-89	O-89	P-89	Q-1	R-89	CH3O2CCH2O	CH3
K-90	L-90	M-90	N-90	O-90	P-90	Q-2	R-90	CH3O2CCH(CH3)O	CH3
K-91	L-91	M-91	N-91	O-91	P-91	Q-3	R-91	PhCH2O	CH3
K-92	L-92	M-92	N-92	O-92	P-92	Q-4	R-92	Ph	CH3
K-93	L-93	M-93	N-93	O-93	P-93	Q-1	R-93	4-CF3O-Ph	CH3
K-94	L-94	M-94	N-94	O-94	P-94	Q-2	R-94	4-(4-CF3O)-Ph	CH3
K-95	L-95	M-95	N-95	O-95	P-95	Q-3	R-95	CF3CH2	CH3
K-96	L-96	M-96	N-96	O-96	P-96	Q-4	R-96	CH3OCH2CH2	CH3
K-97	L-97	M-97	N-97	O-97	P-97	Q-1	R-97	CH3CH2OCH2CH2	CH3
K-98	L-98	M-98	N-98	O-98	P-98	Q-2	R-98	CH3OCH2CH2CH2	CH3
K-99	L-99	M-99	N-99	O-99	P-99	Q-3	R-99	C2H5OCH2CH2CH2	CH3
K-100	L-100	M-100	N-100	O-100	P-100	Q-4	R-100	n-C4H9OCH2CH2CH2	CH3
K-101	L-101	M-101	N-101	O-101	P-101	Q-1	R-101	(CH3O)2CHCH2	CH3
K-102	L-102	M-102	N-102	O-102	P-102	Q-2	R-102	HOCH2CH2	CH3
K-103	L-103	M-103	N-103	O-103	P-103	Q-3	R-103	HOCH2CH2CH2	CH3

Compound										R ³	R ⁴
K-104	L-104	M-104	N-104	O-104	P-104	Q-4	R-104	CH ₃ OCH ₂ CH ₂ CH ₂			CH ₃
K-105	L-105	M-105	N-105	O-105	P-105	Q-1	R-105	C ₂ H ₅ OCH ₂ CH ₂ CH ₂			CH ₃
K-106	L-106	M-106	N-106	O-106	P-106	Q-2	R-106	n-C ₄ H ₉ OCH ₂ CH ₂ CH ₂			CH ₃
K-107	L-107	M-107	N-107	O-107	P-107	Q-3	R-107	(CH ₃ O) ₂ CHCH ₂			CH ₃
K-108	L-108	M-108	N-108	O-108	P-108	Q-4	R-108	HOCH ₂ CH ₂			CH ₃
K-109	L-109	M-109	N-109	O-109	P-109	Q-1	R-109	HOCH ₂ CH ₂ CH ₂			CH ₃
K-110	L-110	M-110	N-110	O-110	P-110	Q-2	R-110	CH ₂ =CHCH ₂			PhCH ₂
K-111	L-111	M-111	N-111	O-111	P-111	Q-3	R-111	CHCCH ₂			PhCH ₂
K-112	L-112	M-112	N-112	O-112	P-112	Q-4	R-112	cyclo-C ₃ H ₅			PhCH ₂
K-113	L-113	M-113	N-113	O-113	P-113	Q-1	R-113	cyclo-C ₅ H ₉			PhCH ₂
K-114	L-114	M-114	N-114	O-114	P-114	Q-2	R-114	cyclo-C ₆ H ₁₁			PhCH ₂
K-115	L-115	M-115	N-115	O-115	P-115	Q-3	R-115	NH ₂			PhCH ₂
K-116	L-116	M-116	N-116	O-116	P-116	Q-4	R-116	CH ₃ NH			PhCH ₂
K-117	L-117	M-117	N-117	O-117	P-117	Q-1	R-117	C ₂ H ₅ NH			PhCH ₂
K-118	L-118	M-118	N-118	O-118	P-118	Q-2	R-118	PhNH			PhCH ₂
K-119	L-119	M-119	N-119	O-119	P-119	Q-3	R-119	HO			PhCH ₂
K-120	L-120	M-120	N-120	O-120	P-120	Q-4	R-120	CH ₃ O			PhCH ₂
K-121	L-121	M-121	N-121	O-121	P-121	Q-1	R-121	C ₂ H ₅ O			PhCH ₂
K-122	L-122	M-122	N-122	O-122	P-122	Q-2	R-122	CH ₂ =CHCH ₂ O			PhCH ₂
K-123	L-123	M-123	N-123	O-123	P-123	Q-3	R-123	CHCCH ₂ O			PhCH ₂
K-124	L-124	M-124	N-124	O-124	P-124	Q-4	R-124	CH ₃ O ₂ CCH ₂ O			PhCH ₂
K-125	L-125	M-125	N-125	O-125	P-125	Q-1	R-125	CH ₃ O ₂ CCH(CH ₃)O			PhCH ₂
K-126	L-126	M-126	N-126	O-126	P-126	Q-2	R-126	PhCH ₂ O			PhCH ₂
K-127	L-127	M-127	N-127	O-127	P-127	Q-3	R-127	Ph			PhCH ₂
K-128	L-128	M-128	N-128	O-128	P-128	Q-4	R-128	4-CF ₃ O-Ph			PhCH ₂
K-129	L-129	M-129	N-129	O-129	P-129	Q-1	R-129	4-(4-CF ₃ O)-Ph			PhCH ₂

Compound										R ³	R ⁴
K-130	L-130	M-130	N-130	O-130	P-130	Q-2	R-130	CF ₃ CH ₂			PhCH ₂
K-131	L-131	M-131	N-131	O-131	P-131	Q-3	R-131	CH ₃ OCH ₂ CH ₂			PhCH ₂
K-132	L-132	M-132	N-132	O-132	P-132	Q-4	R-132	CH ₃ CH ₂ OCH ₂ CH ₂			PhCH ₂
K-133	L-133	M-133	N-133	O-133	P-133	Q-1	R-133	CH ₃ OCH ₂ CH ₂ CH ₂			PhCH ₂
K-134	L-134	M-134	N-134	O-134	P-134	Q-2	R-134	C ₂ H ₅ OCH ₂ CH ₂ CH ₂			PhCH ₂
K-135	L-135	M-135	N-135	O-135	P-135	Q-3	R-135	n-C ₄ H ₉ OCH ₂ CH ₂ CH ₂			PhCH ₂
K-136	L-136	M-136	N-136	O-136	P-136	Q-4	R-136	(CH ₃ O) ₂ CHCH ₂			PhCH ₂
K-137	L-137	M-137	N-137	O-137	P-137	Q-1	R-137	HOCH ₂ CH ₂			PhCH ₂
K-138	L-138	M-138	N-138	O-138	P-138	Q-2	R-138	HOCH ₂ CH ₂ CH ₂			PhCH ₂
K-139	L-139	M-139	N-139	O-139	P-139	Q-3	R-139	CH ₃ OCH ₂ CH ₂ CH ₂			PhCH ₂
K-140	L-140	M-140	N-140	O-140	P-140	Q-4	R-140	C ₂ H ₅ OCH ₂ CH ₂ CH ₂			PhCH ₂
K-141	L-141	M-141	N-141	O-141	P-141	Q-1	R-141	n-C ₄ H ₉ OCH ₂ CH ₂ CH ₂			PhCH ₂
K-142	L-142	M-142	N-142	O-142	P-142	Q-2	R-142	(CH ₃ O) ₂ CHCH ₂			PhCH ₂
K-143	L-143	M-143	N-143	O-143	P-143	Q-3	R-143	HOCH ₂ CH ₂			PhCH ₂
K-144	L-144	M-144	N-144	O-144	P-144	Q-4	R-144	HOCH ₂ CH ₂ CH ₂			PhCH ₂
K-145	L-145	M-145	N-145	O-145	P-145	Q-1	R-145	CH ₂ CH ₂ CH ₂ CH ₂			
K-146	L-146	M-146	N-146	O-146	P-146	Q-2	R-146	CH ₂ CH ₂ CH ₂ CH ₂ CH ₂			
K-147	L-147	M-147	N-147	O-147	P-147	Q-3	R-147	CH ₂ CH ₂ OCH ₂ CH ₂			
K-148	L-148	M-148	N-148	O-148	P-148	Q-4	R-148	CH ₂ CH ₂ SCCH ₂ CH ₂			
K-149	L-149	M-149	N-149	O-149	P-149	Q-1	R-149	CH ₂ CH ₂ NHCH ₂ CH ₂			
K-150	L-150	M-150	N-150	O-150	P-150	Q-2	R-150	CH ₂ CH ₂ N(CH ₃)CH ₂ CH ₂			
K-151	L-151	M-151	N-151	O-151	P-151	Q-3	R-151	N=CHCH ₂ CH ₂			

Table 4

Compounds of formula (IA):



(IA)

Compound	U	R ⁷	R ⁸	W	R ⁴
S-1	O	H	H	CH ₂	H
S-2	O	H	H	CH ₂	n-C ₃ H ₇
S-3	O	H	H	CH ₂	iso-C ₃ H ₇
S-4	O	H	H	CH ₂	n-C ₄ H ₉
S-5	O	H	H	CH ₂	iso-C ₄ H ₉
S-6	O	H	H	CH ₂	sec-C ₄ H ₉
S-7	O	H	H	CH ₂	tert-C ₄ H ₉
S-8	O	H	H	CH ₂	n-C ₅ H ₁₁
S-9	O	H	H	CH ₂	n-C ₆ H ₁₃
S-10	O	H	H	CH ₂	cyclo-C ₃ H ₅
S-11	O	H	H	CH ₂	cyclo-C ₅ H ₉
S-12	O	H	H	CH ₂	cyclo-C ₆ H ₁₁
S-13	O	H	H	CH ₂	CH ₂ =CHCH ₂
S-14	O	H	H	CH ₂	CHCCH ₂
S-15	O	H	H	CH ₂	PhCH ₂
S-16	O	H	H	CH ₂	Ph(CH ₃)CH
S-17	O	H	H	CH ₂	Ph(CH ₃) ₂ C
S-18	O	H	H	CH ₂	Ph
S-19	O	H	H	CH ₂	2-Cl-Ph
S-20	O	H	H	CH ₂	3-Cl-Ph
S-21	O	H	H	CH ₂	4-Cl-Ph
S-22	O	H	H	CH ₂	4-CF ₃ O-Ph
S-23	O	H	H	CH ₂	4-(4-CF ₃ -PhO)-Ph
S-24	O	CH ₃	H	CH ₂	C ₂ H ₅
S-25	O	CH ₃	H	CH ₂	n-C ₃ H ₇
S-26	O	CH ₃	H	CH ₂	iso-C ₃ H ₇
S-27	O	CH ₃	H	CH ₂	n-C ₄ H ₉
S-28	O	CH ₃	H	CH ₂	iso-C ₄ H ₉
S-29	O	CH ₃	H	CH ₂	sec-C ₄ H ₉
S-30	O	CH ₃	H	CH ₂	tert-C ₄ H ₉
S-31	O	CH ₃	H	CH ₂	n-C ₅ H ₁₁
S-32	O	CH ₃	H	CH ₂	n-C ₆ H ₁₃

Compound	U	R ⁷	R ⁸	W	R ⁴
S-33	O	CH ₃	H	CH ₂	cyclo-C ₃ H ₅
S-34	O	CH ₃	H	CH ₂	cyclo-C ₅ H ₉
S-35	O	CH ₃	H	CH ₂	cyclo-C ₆ H ₁₁
S-36	O	CH ₃	H	CH ₂	CH ₂ =CHCH ₂
S-37	O	CH ₃	H	CH ₂	CHCCH ₂
S-38	O	CH ₃	H	CH ₂	PhCH ₂
S-39	O	CH ₃	H	CH ₂	Ph(CH ₃)CH
S-40	O	CH ₃	H	CH ₂	Ph(CH ₃) ₂ C
S-41	O	CH ₃	H	CH ₂	Ph
S-42	O	CH ₃	H	CH ₂	2-Cl-Ph
S-43	O	CH ₃	H	CH ₂	3-Cl-Ph
S-44	O	CH ₃	H	CH ₂	4-Cl-Ph
S-45	O	CH ₃	H	CH ₂	4-CF ₃ O-Ph
S-46	O	CH ₃	H	CH ₂	4-(4-CF ₃ -PhO)-Ph
S-47	O	CH ₃	CH ₃	CH ₂	CH ₃
S-48	O	CH ₃	CH ₃	CH ₂	C ₂ H ₅
S-49	O	CH ₃	CH ₃	CH ₂	n-C ₃ H ₇
S-50	O	CH ₃	CH ₃	CH ₂	iso-C ₃ H ₇
S-51	O	CH ₃	CH ₃	CH ₂	n-C ₄ H ₉
S-52	O	CH ₃	CH ₃	CH ₂	iso-C ₄ H ₉
S-53	O	CH ₃	CH ₃	CH ₂	sec-C ₄ H ₉
S-54	O	CH ₃	CH ₃	CH ₂	tert-C ₄ H ₉
S-55	O	CH ₃	CH ₃	CH ₂	n-C ₅ H ₁₁
S-56	O	CH ₃	CH ₃	CH ₂	n-C ₆ H ₁₃
S-57	O	CH ₃	CH ₃	CH ₂	cyclo-C ₃ H ₅
S-58	O	CH ₃	CH ₃	CH ₂	cyclo-C ₅ H ₉
S-59	O	CH ₃	CH ₃	CH ₂	cyclo-C ₆ H ₁₁
S-60	O	CH ₃	CH ₃	CH ₂	CH ₂ =CHCH ₂
S-61	O	CH ₃	CH ₃	CH ₂	CHCCH ₂
S-62	O	CH ₃	CH ₃	CH ₂	PhCH ₂
S-63	O	CH ₃	CH ₃	CH ₂	Ph(CH ₃)CH
S-64	O	CH ₃	CH ₃	CH ₂	Ph(CH ₃) ₂ C
S-65	O	CH ₃	CH ₃	CH ₂	Ph
S-66	O	CH ₃	CH ₃	CH ₂	2-Cl-Ph
S-67	O	CH ₃	CH ₃	CH ₂	3-Cl-Ph
S-68	O	CH ₃	CH ₃	CH ₂	4-Cl-Ph
S-69	O	CH ₃	CH ₃	CH ₂	4-CF ₃ O-Ph
S-70	O	CH ₃	CH ₃	CH ₂	4-(4-CF ₃ -PhO)-Ph
S-71	O	OCH ₃	H	CH ₂	C ₂ H ₅
S-72	O	OCH ₃	H	CH ₂	n-C ₃ H ₇
S-73	O	OCH ₃	H	CH ₂	iso-C ₃ H ₇
S-74	O	OCH ₃	H	CH ₂	n-C ₄ H ₉

Compound	U	R'	R ^a	W	R ⁴
S-75	O	OCH3	H	CH2	iso-C4H9
S-76	O	OCH3	H	CH2	sec-C4H9
S-77	O	OCH3	H	CH2	tert-C4H9
S-78	O	OCH3	H	CH2	n-C5H11
S-79	O	OCH3	H	CH2	n-C6H13
S-80	O	OCH3	H	CH2	cyclo-C3H5
S-81	O	OCH3	H	CH2	cyclo-C5H9
S-82	O	OCH3	H	CH2	cyclo-C6H11
S-83	O	OCH3	H	CH2	CH2=CHCH2
S-84	O	OCH3	H	CH2	CHCCH2
S-85	O	OCH3	H	CH2	PhCH2
S-86	O	OCH3	H	CH2	Ph(CH3)CH
S-87	O	OCH3	H	CH2	Ph(CH3)2C
S-88	O	OCH3	H	CH2	Ph
S-89	O	OCH3	H	CH2	2-Cl-Ph
S-90	O	OCH3	H	CH2	3-Cl-Ph
S-91	O	OCH3	H	CH2	4-Cl-Ph
S-92	O	OCH3	H	CH2	4-CF3O-Ph
S-93	O	OCH3	H	CH2	4-(4-CF3-PhO)-Ph
S-94	O	OCH2CH3	H	CH2	CH3
S-95	O	OCH2CH3	H	CH2	C2H5
S-96	O	OCH2CH3	H	CH2	n-C3H7
S-97	O	OCH2CH3	H	CH2	iso-C3H7
S-98	O	OCH2CH3	H	CH2	n-C4H9
S-99	O	OCH2CH3	H	CH2	iso-C4H9
S-100	O	OCH2CH3	H	CH2	sec-C4H9
S-101	O	OCH2CH3	H	CH2	tert-C4H9
S-102	O	OCH2CH3	H	CH2	n-C5H11
S-103	O	OCH2CH3	H	CH2	n-C6H13
S-104	O	OCH2CH3	H	CH2	cyclo-C3H5
S-105	O	OCH2CH3	H	CH2	cyclo-C5H9
S-106	O	OCH2CH3	H	CH2	cyclo-C6H11
S-107	O	OCH2CH3	H	CH2	CH2=CHCH2
S-108	O	OCH2CH3	H	CH2	CHCCH2
S-109	O	OCH2CH3	H	CH2	PhCH2
S-110	O	OCH2CH3	H	CH2	Ph(CH3)CH
S-111	O	OCH2CH3	H	CH2	Ph(CH3)2C
S-112	O	OCH2CH3	H	CH2	Ph
S-113	O	OCH2CH3	H	CH2	2-Cl-Ph
S-114	O	OCH2CH3	H	CH2	3-Cl-Ph
S-115	O	OCH2CH3	H	CH2	4-Cl-Ph
S-116	O	OCH2CH3	H	CH2	4-CF3O-Ph

Compound	U	R ⁷	R ⁸	W	R ⁴
S-117	O	OCH ₂ CH ₃	H	CH ₂	4-(4-CF ₃ -PhO)-Ph
S-118	O	H	H	C=O	H
S-119	O	H	H	C=O	n-C ₃ H ₇
S-120	O	H	H	C=O	iso-C ₃ H ₇
S-121	O	H	H	C=O	n-C ₄ H ₉
S-122	O	H	H	C=O	iso-C ₄ H ₉
S-123	O	H	H	C=O	sec-C ₄ H ₉
S-124	O	H	H	C=O	tert-C ₄ H ₉
S-125	O	H	H	C=O	n-C ₅ H ₁₁
S-126	O	H	H	C=O	n-C ₆ H ₁₃
S-127	O	H	H	C=O	cyclo-C ₃ H ₅
S-128	O	H	H	C=O	cyclo-C ₅ H ₉
S-129	O	H	H	C=O	cyclo-C ₆ H ₁₁
S-130	O	H	H	C=O	CH ₂ =CHCH ₂
S-131	O	H	H	C=O	CHCCH ₂
S-132	O	H	H	C=O	PhCH ₂
S-133	O	H	H	C=O	Ph(CH ₃)CH
S-134	O	H	H	C=O	Ph(CH ₃) ₂ C
S-135	O	H	H	C=O	Ph
S-136	O	H	H	C=O	2-Cl-Ph
S-137	O	H	H	C=O	3-Cl-Ph
S-138	O	H	H	C=O	4-Cl-Ph
S-139	O	H	H	C=O	4-CF ₃ O-Ph
S-140	O	H	H	C=O	4-(4-CF ₃ -PhO)-Ph
S-141	O	CH ₃	H	C=O	C ₂ H ₅
S-142	O	CH ₃	H	C=O	n-C ₃ H ₇
S-143	O	CH ₃	H	C=O	iso-C ₃ H ₇
S-144	O	CH ₃	H	C=O	n-C ₄ H ₉
S-145	O	CH ₃	H	C=O	iso-C ₄ H ₉
S-146	O	CH ₃	H	C=O	sec-C ₄ H ₉
S-147	O	CH ₃	H	C=O	tert-C ₄ H ₉
S-148	O	CH ₃	H	C=O	n-C ₅ H ₁₁
S-149	O	CH ₃	H	C=O	n-C ₆ H ₁₃
S-150	O	CH ₃	H	C=O	cyclo-C ₃ H ₅
S-151	O	CH ₃	H	C=O	cyclo-C ₅ H ₉
S-152	O	CH ₃	H	C=O	cyclo-C ₆ H ₁₁
S-153	O	CH ₃	H	C=O	CH ₂ =CHCH ₂
S-154	O	CH ₃	H	C=O	CHCCH ₂
S-155	O	CH ₃	H	C=O	PhCH ₂
S-156	O	CH ₃	H	C=O	Ph(CH ₃)CH
S-157	O	CH ₃	H	C=O	Ph(CH ₃) ₂ C
S-158	O	CH ₃	H	C=O	Ph

Compound	U	R ⁷	R ⁸	W	R ⁴
S-159	O	CH ₃	H	C=O	2-Cl-Ph
S-160	O	CH ₃	H	C=O	3-Cl-Ph
S-161	O	CH ₃	H	C=O	4-Cl-Ph
S-162	O	CH ₃	H	C=O	4-CF ₃ O-Ph
S-163	O	CH ₃	H	C=O	4-(4-CF ₃ -PhO)-Ph
S-164	O	CH ₃	CH ₃	C=O	CH ₃
S-165	O	CH ₃	CH ₃	C=O	C ₂ H ₅
S-166	O	CH ₃	CH ₃	C=O	n-C ₃ H ₇
S-167	O	CH ₃	CH ₃	C=O	iso-C ₃ H ₇
S-168	O	CH ₃	CH ₃	C=O	n-C ₄ H ₉
S-169	O	CH ₃	CH ₃	C=O	iso-C ₄ H ₉
S-170	O	CH ₃	CH ₃	C=O	sec-C ₄ H ₉
S-171	O	CH ₃	CH ₃	C=O	tert-C ₄ H ₉
S-172	O	CH ₃	CH ₃	C=O	n-C ₅ H ₁₁
S-173	O	CH ₃	CH ₃	C=O	n-C ₆ H ₁₃
S-174	O	CH ₃	CH ₃	C=O	cyclo-C ₃ H ₅
S-175	O	CH ₃	CH ₃	C=O	cyclo-C ₅ H ₉
S-176	O	CH ₃	CH ₃	C=O	cyclo-C ₆ H ₁₁
S-177	O	CH ₃	CH ₃	C=O	CH ₂ =CHCH ₂
S-178	O	CH ₃	CH ₃	C=O	CHCCH ₂
S-179	O	CH ₃	CH ₃	C=O	PhCH ₂
S-180	O	CH ₃	CH ₃	C=O	Ph(CH ₃)CH
S-181	O	CH ₃	CH ₃	C=O	Ph(CH ₃) ₂ C
S-182	O	CH ₃	CH ₃	C=O	Ph
S-183	O	CH ₃	CH ₃	C=O	2-Cl-Ph
S-184	O	CH ₃	CH ₃	C=O	3-Cl-Ph
S-185	O	CH ₃	CH ₃	C=O	4-Cl-Ph
S-186	O	CH ₃	CH ₃	C=O	4-CF ₃ O-Ph
S-187	O	CH ₃	CH ₃	C=O	4-(4-CF ₃ -PhO)-Ph
S-188	O	OCH ₃	H	C=O	C ₂ H ₅
S-189	O	OCH ₃	H	C=O	n-C ₃ H ₇
S-190	O	OCH ₃	H	C=O	iso-C ₃ H ₇
S-191	O	OCH ₃	H	C=O	n-C ₄ H ₉
S-192	O	OCH ₃	H	C=O	iso-C ₄ H ₉
S-193	O	OCH ₃	H	C=O	sec-C ₄ H ₉
S-194	O	OCH ₃	H	C=O	tert-C ₄ H ₉
S-195	O	OCH ₃	H	C=O	n-C ₅ H ₁₁
S-196	O	OCH ₃	H	C=O	n-C ₆ H ₁₃
S-197	O	OCH ₃	H	C=O	cyclo-C ₃ H ₅
S-198	O	OCH ₃	H	C=O	cyclo-C ₅ H ₉
S-199	O	OCH ₃	H	C=O	cyclo-C ₆ H ₁₁
S-200	O	OCH ₃	H	C=O	CH ₂ =CHCH ₂

Compound	U	R ⁷	R ⁸	W	R ⁴
S-201	O	OCH3	H	C=O	CHCCH2
S-202	O	OCH3	H	C=O	PhCH2
S-203	O	OCH3	H	C=O	Ph(CH3)CH
S-204	O	OCH3	H	C=O	Ph(CH3) ₂ C
S-205	O	OCH3	H	C=O	Ph
S-206	O	OCH3	H	C=O	2-Cl-Ph
S-207	O	OCH3	H	C=O	3-Cl-Ph
S-208	O	OCH3	H	C=O	4-Cl-Ph
S-209	O	OCH3	H	C=O	4-CF ₃ O-Ph
S-210	O	OCH3	H	C=O	4-(4-CF ₃ -PhO)-Ph
S-211	O	OCH ₂ CH ₃	H	C=O	CH ₃
S-212	O	OCH ₂ CH ₃	H	C=O	C ₂ H ₅
S-213	O	OCH ₂ CH ₃	H	C=O	n-C ₃ H ₇
S-214	O	OCH ₂ CH ₃	H	C=O	iso-C ₃ H ₇
S-215	O	OCH ₂ CH ₃	H	C=O	n-C ₄ H ₉
S-216	O	OCH ₂ CH ₃	H	C=O	iso-C ₄ H ₉
S-217	O	OCH ₂ CH ₃	H	C=O	sec-C ₄ H ₉
S-218	O	OCH ₂ CH ₃	H	C=O	tert-C ₄ H ₉
S-219	O	OCH ₂ CH ₃	H	C=O	n-C ₅ H ₁₁
S-220	O	OCH ₂ CH ₃	H	C=O	n-C ₆ H ₁₃
S-221	O	OCH ₂ CH ₃	H	C=O	cyclo-C ₃ H ₅
S-222	O	OCH ₂ CH ₃	H	C=O	cyclo-C ₅ H ₉
S-223	O	OCH ₂ CH ₃	H	C=O	cyclo-C ₆ H ₁₁
S-224	O	OCH ₂ CH ₃	H	C=O	CH ₂ =CHCH ₂
S-225	O	OCH ₂ CH ₃	H	C=O	CHCCH ₂
S-226	O	OCH ₂ CH ₃	H	C=O	PhCH ₂
S-227	O	OCH ₂ CH ₃	H	C=O	Ph(CH ₃)CH
S-228	O	OCH ₂ CH ₃	H	C=O	Ph(CH ₃) ₂ C
S-229	O	OCH ₂ CH ₃	H	C=O	Ph
S-230	O	OCH ₂ CH ₃	H	C=O	2-Cl-Ph
S-231	O	OCH ₂ CH ₃	H	C=O	3-Cl-Ph
S-232	O	OCH ₂ CH ₃	H	C=O	4-Cl-Ph
S-233	O	OCH ₂ CH ₃	H	C=O	4-CF ₃ O-Ph
S-234	O	OCH ₂ CH ₃	H	C=O	4-(4-CF ₃ -PhO)-Ph
S-235	O	H	H	CH ₂ CH ₂	C ₂ H ₅
S-236	O	H	H	CH ₂ CH ₂	n-C ₃ H ₇
S-237	O	H	H	CH ₂ CH ₂	iso-C ₃ H ₇
S-238	O	H	H	CH ₂ CH ₂	n-C ₄ H ₉
S-239	O	H	H	CH ₂ CH ₂	iso-C ₄ H ₉
S-240	O	H	H	CH ₂ CH ₂	sec-C ₄ H ₉
S-241	O	H	H	CH ₂ CH ₂	tert-C ₄ H ₉
S-242	O	H	H	CH ₂ CH ₂	n-C ₅ H ₁₁

Compound	U	R ⁷	R ⁸	W	R ⁴
S-243	O	H	H	CH ₂ CH ₂	n-C ₆ H ₁₃
S-244	O	H	H	CH ₂ CH ₂	cyclo-C ₃ H ₅
S-245	O	H	H	CH ₂ CH ₂	cyclo-C ₅ H ₉
S-246	O	H	H	CH ₂ CH ₂	cyclo-C ₆ H ₁₁
S-247	O	H	H	CH ₂ CH ₂	CH ₂ =CHCH ₂
S-248	O	H	H	CH ₂ CH ₂	CHCCH ₂
S-249	O	H	H	CH ₂ CH ₂	PhCH ₂
S-250	O	H	H	CH ₂ CH ₂	Ph(CH ₃)CH
S-251	O	H	H	CH ₂ CH ₂	Ph(CH ₃) ₂ C
S-252	O	H	H	CH ₂ CH ₂	Ph
S-253	O	H	H	CH ₂ CH ₂	2-Cl-Ph
S-254	O	H	H	CH ₂ CH ₂	3-Cl-Ph
S-255	O	H	H	CH ₂ CH ₂	4-Cl-Ph
S-256	O	H	H	CH ₂ CH ₂	4-CF ₃ O-Ph
S-257	O	H	H	CH ₂ CH ₂	4-(4-CF ₃ -PhO)-Ph
S-258	O	CH ₃	H	CH ₂ CH ₂	CH ₃
S-259	O	CH ₃	H	CH ₂ CH ₂	C ₂ H ₅
S-260	O	CH ₃	H	CH ₂ CH ₂	n-C ₃ H ₇
S-261	O	CH ₃	H	CH ₂ CH ₂	iso-C ₃ H ₇
S-262	O	CH ₃	H	CH ₂ CH ₂	n-C ₄ H ₉
S-263	O	CH ₃	H	CH ₂ CH ₂	iso-C ₄ H ₉
S-264	O	CH ₃	H	CH ₂ CH ₂	sec-C ₄ H ₉
S-265	O	CH ₃	H	CH ₂ CH ₂	tert-C ₄ H ₉
S-266	O	CH ₃	H	CH ₂ CH ₂	n-C ₅ H ₁₁
S-267	O	CH ₃	H	CH ₂ CH ₂	n-C ₆ H ₁₃
S-268	O	CH ₃	H	CH ₂ CH ₂	cyclo-C ₃ H ₅
S-269	O	CH ₃	H	CH ₂ CH ₂	cyclo-C ₅ H ₉
S-270	O	CH ₃	H	CH ₂ CH ₂	cyclo-C ₆ H ₁₁
S-271	O	CH ₃	H	CH ₂ CH ₂	CH ₂ =CHCH ₂
S-272	O	CH ₃	H	CH ₂ CH ₂	CHCCH ₂
S-273	O	CH ₃	H	CH ₂ CH ₂	PhCH ₂
S-274	O	CH ₃	H	CH ₂ CH ₂	Ph(CH ₃)CH
S-275	O	CH ₃	H	CH ₂ CH ₂	Ph(CH ₃) ₂ C
S-276	O	CH ₃	H	CH ₂ CH ₂	Ph
S-277	O	CH ₃	H	CH ₂ CH ₂	2-Cl-Ph
S-278	O	CH ₃	H	CH ₂ CH ₂	3-Cl-Ph
S-279	O	CH ₃	H	CH ₂ CH ₂	4-Cl-Ph
S-280	O	CH ₃	H	CH ₂ CH ₂	4-CF ₃ O-Ph
S-281	O	CH ₃	H	CH ₂ CH ₂	4-(4-CF ₃ -PhO)-Ph
S-282	O	CH ₃	CH ₃	CH ₂ CH ₂	H
S-283	O	CH ₃	CH ₃	CH ₂ CH ₂	CH ₃
S-284	O	CH ₃	CH ₃	CH ₂ CH ₂	C ₂ H ₅

Compound	U	R ¹	R ²	W	R ⁴
S-285	O	CH ₃	CH ₃	CH ₂ CH ₂	n-C ₃ H ₇
S-286	O	CH ₃	CH ₃	CH ₂ CH ₂	iso-C ₃ H ₇
S-287	O	CH ₃	CH ₃	CH ₂ CH ₂	n-C ₄ H ₉
S-288	O	CH ₃	CH ₃	CH ₂ CH ₂	iso-C ₄ H ₉
S-289	O	CH ₃	CH ₃	CH ₂ CH ₂	sec-C ₄ H ₉
S-290	O	CH ₃	CH ₃	CH ₂ CH ₂	tert-C ₄ H ₉
S-291	O	CH ₃	CH ₃	CH ₂ CH ₂	n-C ₅ H ₁₁
S-292	O	CH ₃	CH ₃	CH ₂ CH ₂	n-C ₆ H ₁₃
S-293	O	CH ₃	CH ₃	CH ₂ CH ₂	cyclo-C ₃ H ₅
S-294	O	CH ₃	CH ₃	CH ₂ CH ₂	cyclo-C ₅ H ₉
S-295	O	CH ₃	CH ₃	CH ₂ CH ₂	cyclo-C ₆ H ₁₁
S-296	O	CH ₃	CH ₃	CH ₂ CH ₂	CH ₂ =CHCH ₂
S-297	O	CH ₃	CH ₃	CH ₂ CH ₂	CHCCH ₂
S-298	O	CH ₃	CH ₃	CH ₂ CH ₂	PhCH ₂
S-299	O	CH ₃	CH ₃	CH ₂ CH ₂	Ph(CH ₃)CH
S-300	O	CH ₃	CH ₃	CH ₂ CH ₂	Ph(CH ₃) ₂ C
S-301	O	CH ₃	CH ₃	CH ₂ CH ₂	Ph
S-302	O	CH ₃	CH ₃	CH ₂ CH ₂	2-Cl-Ph
S-303	O	CH ₃	CH ₃	CH ₂ CH ₂	3-Cl-Ph
S-304	O	CH ₃	CH ₃	CH ₂ CH ₂	4-Cl-Ph
S-305	O	CH ₃	CH ₃	CH ₂ CH ₂	4-CF ₃ O-Ph
S-306	O	CH ₃	CH ₃	CH ₂ CH ₂	4-(4-CF ₃ -PhO)-Ph
S-307	O	OCH ₃	H	CH ₂ CH ₂	CH ₃
S-308	O	OCH ₃	H	CH ₂ CH ₂	C ₂ H ₅
S-309	O	OCH ₃	H	CH ₂ CH ₂	n-C ₃ H ₇
S-310	O	OCH ₃	H	CH ₂ CH ₂	iso-C ₃ H ₇
S-311	O	OCH ₃	H	CH ₂ CH ₂	n-C ₄ H ₉
S-312	O	OCH ₃	H	CH ₂ CH ₂	iso-C ₄ H ₉
S-313	O	OCH ₃	H	CH ₂ CH ₂	sec-C ₄ H ₉
S-314	O	OCH ₃	H	CH ₂ CH ₂	tert-C ₄ H ₉
S-315	O	OCH ₃	H	CH ₂ CH ₂	n-C ₅ H ₁₁
S-316	O	OCH ₃	H	CH ₂ CH ₂	n-C ₆ H ₁₃
S-317	O	OCH ₃	H	CH ₂ CH ₂	cyclo-C ₃ H ₅
S-318	O	OCH ₃	H	CH ₂ CH ₂	cyclo-C ₅ H ₉
S-319	O	OCH ₃	H	CH ₂ CH ₂	cyclo-C ₆ H ₁₁
S-320	O	OCH ₃	H	CH ₂ CH ₂	CH ₂ =CHCH ₂
S-321	O	OCH ₃	H	CH ₂ CH ₂	CHCCH ₂
S-322	O	OCH ₃	H	CH ₂ CH ₂	PhCH ₂
S-323	O	OCH ₃	H	CH ₂ CH ₂	Ph(CH ₃)CH
S-324	O	OCH ₃	H	CH ₂ CH ₂	Ph(CH ₃) ₂ C
S-325	O	OCH ₃	H	CH ₂ CH ₂	Ph
S-326	O	OCH ₃	H	CH ₂ CH ₂	2-Cl-Ph

Compound	U	R ⁷	R ⁸	W	R ⁴
S-327	O	OCH ₃	H	CH ₂ CH ₂	3-Cl-Ph
S-328	O	OCH ₃	H	CH ₂ CH ₂	4-Cl-Ph
S-329	O	OCH ₃	H	CH ₂ CH ₂	4-CF ₃ O-Ph
S-330	O	OCH ₃	H	CH ₂ CH ₂	4-(4-CF ₃ -PhO)-Ph
S-331	O	OCH ₂ CH ₃	H	CH ₂ CH ₂	H
S-332	O	OCH ₂ CH ₃	H	CH ₂ CH ₂	CH ₃
S-333	O	OCH ₂ CH ₃	H	CH ₂ CH ₂	C ₂ H ₅
S-334	O	OCH ₂ CH ₃	H	CH ₂ CH ₂	n-C ₃ H ₇
S-335	O	OCH ₂ CH ₃	H	CH ₂ CH ₂	iso-C ₃ H ₇
S-336	O	OCH ₂ CH ₃	H	CH ₂ CH ₂	n-C ₄ H ₉
S-337	O	OCH ₂ CH ₃	H	CH ₂ CH ₂	iso-C ₄ H ₉
S-338	O	OCH ₂ CH ₃	H	CH ₂ CH ₂	sec-C ₄ H ₉
S-339	O	OCH ₂ CH ₃	H	CH ₂ CH ₂	tert-C ₄ H ₉
S-340	O	OCH ₂ CH ₃	H	CH ₂ CH ₂	n-C ₅ H ₁₁
S-341	O	OCH ₂ CH ₃	H	CH ₂ CH ₂	n-C ₆ H ₁₃
S-342	O	OCH ₂ CH ₃	H	CH ₂ CH ₂	cyclo-C ₃ H ₅
S-343	O	OCH ₂ CH ₃	H	CH ₂ CH ₂	cyclo-C ₅ H ₉
S-344	O	OCH ₂ CH ₃	H	CH ₂ CH ₂	cyclo-C ₆ H ₁₁
S-345	O	OCH ₂ CH ₃	H	CH ₂ CH ₂	CH ₂ =CHCH ₂
S-346	O	OCH ₂ CH ₃	H	CH ₂ CH ₂	CHCCH ₂
S-347	O	OCH ₂ CH ₃	H	CH ₂ CH ₂	PhCH ₂
S-348	O	OCH ₂ CH ₃	H	CH ₂ CH ₂	Ph(CH ₃)CH
S-349	O	OCH ₂ CH ₃	H	CH ₂ CH ₂	Ph(CH ₃) ₂ C
S-350	O	OCH ₂ CH ₃	H	CH ₂ CH ₂	Ph
S-351	O	OCH ₂ CH ₃	H	CH ₂ CH ₂	2-Cl-Ph
S-352	O	OCH ₂ CH ₃	H	CH ₂ CH ₂	3-Cl-Ph
S-353	O	OCH ₂ CH ₃	H	CH ₂ CH ₂	4-Cl-Ph
S-354	O	OCH ₂ CH ₃	H	CH ₂ CH ₂	4-CF ₃ O-Ph
S-355	O	OCH ₂ CH ₃	H	CH ₂ CH ₂	4-(4-CF ₃ -PhO)-Ph
S-356	S	H	H	CH ₂	H
S-357	S	H	H	CH ₂	n-C ₃ H ₇
S-358	S	H	H	CH ₂	iso-C ₃ H ₇
S-359	S	H	H	CH ₂	n-C ₄ H ₉
S-360	S	H	H	CH ₂	iso-C ₄ H ₉
S-361	S	H	H	CH ₂	sec-C ₄ H ₉
S-362	S	H	H	CH ₂	tert-C ₄ H ₉
S-363	S	H	H	CH ₂	n-C ₅ H ₁₁
S-364	S	H	H	CH ₂	n-C ₆ H ₁₃
S-365	S	H	H	CH ₂	cyclo-C ₃ H ₅
S-366	S	H	H	CH ₂	cyclo-C ₅ H ₉
S-367	S	H	H	CH ₂	cyclo-C ₆ H ₁₁
S-368	S	H	H	CH ₂	CH ₂ =CHCH ₂

Compound	U	R ⁷	R ⁸	W	R ⁴
S-369	S	H	H	CH ₂	CHCCH ₂
S-370	S	H	H	CH ₂	PhCH ₂
S-371	S	H	H	CH ₂	Ph(CH ₃)CH
S-372	S	H	H	CH ₂	Ph(CH ₃) ₂ C
S-373	S	H	H	CH ₂	Ph
S-374	S	H	H	CH ₂	2-Cl-Ph
S-375	S	H	H	CH ₂	3-Cl-Ph
S-376	S	H	H	CH ₂	4-Cl-Ph
S-377	S	H	H	CH ₂	4-CF ₃ O-Ph
S-378	S	H	H	CH ₂	4-(4-CF ₃ -PhO)-Ph
S-379	S	CH ₃	H	CH ₂	C ₂ H ₅
S-380	S	CH ₃	H	CH ₂	n-C ₃ H ₇
S-381	S	CH ₃	H	CH ₂	iso-C ₃ H ₇
S-382	S	CH ₃	H	CH ₂	n-C ₄ H ₉
S-383	S	CH ₃	H	CH ₂	iso-C ₄ H ₉
S-384	S	CH ₃	H	CH ₂	sec-C ₄ H ₉
S-385	S	CH ₃	H	CH ₂	tert-C ₄ H ₉
S-386	S	CH ₃	H	CH ₂	n-C ₅ H ₁₁
S-387	S	CH ₃	H	CH ₂	n-C ₆ H ₁₃
S-388	S	CH ₃	H	CH ₂	cyclo-C ₃ H ₅
S-389	S	CH ₃	H	CH ₂	cyclo-C ₅ H ₉
S-390	S	CH ₃	H	CH ₂	cyclo-C ₆ H ₁₁
S-391	S	CH ₃	H	CH ₂	CH ₂ =CHCH ₂
S-392	S	CH ₃	H	CH ₂	CHCCH ₂
S-393	S	CH ₃	H	CH ₂	PhCH ₂
S-394	S	CH ₃	H	CH ₂	Ph(CH ₃)CH
S-395	S	CH ₃	H	CH ₂	Ph(CH ₃) ₂ C
S-396	S	CH ₃	H	CH ₂	Ph
S-397	S	CH ₃	H	CH ₂	2-Cl-Ph
S-398	S	CH ₃	H	CH ₂	3-Cl-Ph
S-399	S	CH ₃	H	CH ₂	4-Cl-Ph
S-400	S	CH ₃	H	CH ₂	4-CF ₃ O-Ph
S-401	S	CH ₃	H	CH ₂	4-(4-CF ₃ -PhO)-Ph
S-402	S	CH ₃	CH ₃	CH ₂	CH ₃
S-403	S	CH ₃	CH ₃	CH ₂	C ₂ H ₅
S-404	S	CH ₃	CH ₃	CH ₂	n-C ₃ H ₇
S-405	S	CH ₃	CH ₃	CH ₂	iso-C ₃ H ₇
S-406	S	CH ₃	CH ₃	CH ₂	n-C ₄ H ₉
S-407	S	CH ₃	CH ₃	CH ₂	iso-C ₄ H ₉
S-408	S	CH ₃	CH ₃	CH ₂	sec-C ₄ H ₉
S-409	S	CH ₃	CH ₃	CH ₂	tert-C ₄ H ₉
S-410	S	CH ₃	CH ₃	CH ₂	n-C ₅ H ₁₁

Compound	U	R ⁷	R ⁸	W	R ⁴
S-411	S	CH3	CH3	CH2	n-C6H13
S-412	S	CH3	CH3	CH2	cyclo-C3H5
S-413	S	CH3	CH3	CH2	cyclo-C5H9
S-414	S	CH3	CH3	CH2	cyclo-C6H11
S-415	S	CH3	CH3	CH2	CH2=CHCH2
S-416	S	CH3	CH3	CH2	CHCCH2
S-417	S	CH3	CH3	CH2	PhCH2
S-418	S	CH3	CH3	CH2	Ph(CH3)CH
S-419	S	CH3	CH3	CH2	Ph(CH3)2C
S-420	S	CH3	CH3	CH2	Ph
S-421	S	CH3	CH3	CH2	2-Cl-Ph
S-422	S	CH3	CH3	CH2	3-Cl-Ph
S-423	S	CH3	CH3	CH2	4-Cl-Ph
S-424	S	CH3	CH3	CH2	4-CF3O-Ph
S-425	S	CH3	CH3	CH2	4-(4-CF3-PhO)-Ph
S-426	S	OCH3	H	CH2	C2H5
S-427	S	OCH3	H	CH2	n-C3H7
S-428	S	OCH3	H	CH2	iso-C3H7
S-429	S	OCH3	H	CH2	n-C4H9
S-430	S	OCH3	H	CH2	iso-C4H9
S-431	S	OCH3	H	CH2	sec-C4H9
S-432	S	OCH3	H	CH2	tert-C4H9
S-433	S	OCH3	H	CH2	n-C5H11
S-434	S	OCH3	H	CH2	n-C6H13
S-435	S	OCH3	H	CH2	cyclo-C3H5
S-436	S	OCH3	H	CH2	cyclo-C5H9
S-437	S	OCH3	H	CH2	cyclo-C6H11
S-438	S	OCH3	H	CH2	CH2=CHCH2
S-439	S	OCH3	H	CH2	CHCCH2
S-440	S	OCH3	H	CH2	PhCH2
S-441	S	OCH3	H	CH2	Ph(CH3)CH
S-442	S	OCH3	H	CH2	Ph(CH3)2C
S-443	S	OCH3	H	CH2	Ph
S-444	S	OCH3	H	CH2	2-Cl-Ph
S-445	S	OCH3	H	CH2	3-Cl-Ph
S-446	S	OCH3	H	CH2	4-Cl-Ph
S-447	S	OCH3	H	CH2	4-CF3O-Ph
S-448	S	OCH3	H	CH2	4-(4-CF3-PhO)-Ph
S-449	S	H	H	CH2CH2	C2H5
S-450	S	H	H	CH2CH2	n-C3H7
S-451	S	H	H	CH2CH2	iso-C3H7
S-452	S	H	H	CH2CH2	n-C4H9

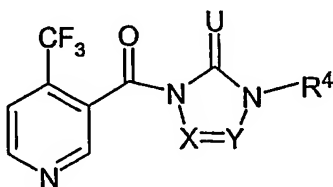
Compound	U	R ⁷	R ⁸	W	R ⁴
S-453	S	H	H	CH ₂ CH ₂	iso-C ₄ H ₉
S-454	S	H	H	CH ₂ CH ₂	sec-C ₄ H ₉
S-455	S	H	H	CH ₂ CH ₂	tert-C ₄ H ₉
S-456	S	H	H	CH ₂ CH ₂	n-C ₅ H ₁₁
S-457	S	H	H	CH ₂ CH ₂	n-C ₆ H ₁₃
S-458	S	H	H	CH ₂ CH ₂	cyclo-C ₃ H ₅
S-459	S	H	H	CH ₂ CH ₂	cyclo-C ₅ H ₉
S-460	S	H	H	CH ₂ CH ₂	cyclo-C ₆ H ₁₁
S-461	S	H	H	CH ₂ CH ₂	CH ₂ =CHCH ₂
S-462	S	H	H	CH ₂ CH ₂	CHCCH ₂
S-463	S	H	H	CH ₂ CH ₂	PhCH ₂
S-464	S	H	H	CH ₂ CH ₂	Ph(CH ₃)CH
S-465	S	H	H	CH ₂ CH ₂	Ph(CH ₃) ₂ C
S-466	S	H	H	CH ₂ CH ₂	Ph
S-467	S	H	H	CH ₂ CH ₂	2-Cl-Ph
S-468	S	H	H	CH ₂ CH ₂	3-Cl-Ph
S-469	S	H	H	CH ₂ CH ₂	4-Cl-Ph
S-470	S	H	H	CH ₂ CH ₂	4-CF ₃ O-Ph
S-471	S	H	H	CH ₂ CH ₂	4-(4-CF ₃ -PhO)-Ph
S-472	S	CH ₃	H	CH ₂ CH ₂	CH ₃
S-473	S	CH ₃	H	CH ₂ CH ₂	C ₂ H ₅
S-474	S	CH ₃	H	CH ₂ CH ₂	n-C ₃ H ₇
S-475	S	CH ₃	H	CH ₂ CH ₂	iso-C ₃ H ₇
S-476	S	CH ₃	H	CH ₂ CH ₂	n-C ₄ H ₉
S-477	S	CH ₃	H	CH ₂ CH ₂	iso-C ₄ H ₉
S-478	S	CH ₃	H	CH ₂ CH ₂	sec-C ₄ H ₉
S-479	S	CH ₃	H	CH ₂ CH ₂	tert-C ₄ H ₉
S-480	S	CH ₃	H	CH ₂ CH ₂	n-C ₅ H ₁₁
S-481	S	CH ₃	H	CH ₂ CH ₂	n-C ₆ H ₁₃
S-482	S	CH ₃	H	CH ₂ CH ₂	cyclo-C ₃ H ₅
S-483	S	CH ₃	H	CH ₂ CH ₂	cyclo-C ₅ H ₉
S-484	S	CH ₃	H	CH ₂ CH ₂	cyclo-C ₆ H ₁₁
S-485	S	CH ₃	H	CH ₂ CH ₂	CH ₂ =CHCH ₂
S-486	S	CH ₃	H	CH ₂ CH ₂	CHCCH ₂
S-487	S	CH ₃	H	CH ₂ CH ₂	PhCH ₂
S-488	S	CH ₃	H	CH ₂ CH ₂	Ph(CH ₃)CH
S-489	S	CH ₃	H	CH ₂ CH ₂	Ph(CH ₃) ₂ C
S-490	S	CH ₃	H	CH ₂ CH ₂	Ph
S-491	S	CH ₃	H	CH ₂ CH ₂	2-Cl-Ph
S-492	S	CH ₃	H	CH ₂ CH ₂	3-Cl-Ph
S-493	S	CH ₃	H	CH ₂ CH ₂	4-Cl-Ph
S-494	S	CH ₃	H	CH ₂ CH ₂	4-CF ₃ O-Ph

Compound	U	R ¹	R ²	W	R ⁴
S-495	S	CH ₃	H	CH ₂ CH ₂	4-(4-CF ₃ -PhO)-Ph
S-496	S	CH ₃	CH ₃	CH ₂ CH ₂	H
S-497	S	CH ₃	CH ₃	CH ₂ CH ₂	CH ₃
S-498	S	CH ₃	CH ₃	CH ₂ CH ₂	C ₂ H ₅
S-499	S	CH ₃	CH ₃	CH ₂ CH ₂	n-C ₃ H ₇
S-500	S	CH ₃	CH ₃	CH ₂ CH ₂	iso-C ₃ H ₇
S-501	S	CH ₃	CH ₃	CH ₂ CH ₂	n-C ₄ H ₉
S-502	S	CH ₃	CH ₃	CH ₂ CH ₂	iso-C ₄ H ₉
S-503	S	CH ₃	CH ₃	CH ₂ CH ₂	sec-C ₄ H ₉
S-504	S	CH ₃	CH ₃	CH ₂ CH ₂	n-C ₄ H ₉
S-505	S	CH ₃	CH ₃	CH ₂ CH ₂	iso-C ₄ H ₉
S-506	S	CH ₃	CH ₃	CH ₂ CH ₂	sec-C ₄ H ₉
S-507	S	CH ₃	CH ₃	CH ₂ CH ₂	tert-C ₄ H ₉
S-508	S	CH ₃	CH ₃	CH ₂ CH ₂	n-C ₅ H ₁₁
S-509	S	CH ₃	CH ₃	CH ₂ CH ₂	n-C ₆ H ₁₃
S-510	S	CH ₃	CH ₃	CH ₂ CH ₂	cyclo-C ₃ H ₅
S-511	S	CH ₃	CH ₃	CH ₂ CH ₂	cyclo-C ₅ H ₉
S-512	S	CH ₃	CH ₃	CH ₂ CH ₂	cyclo-C ₆ H ₁₁
S-513	S	CH ₃	CH ₃	CH ₂ CH ₂	CH ₂ =CHCH ₂
S-514	S	CH ₃	CH ₃	CH ₂ CH ₂	CHCCH ₂
S-515	S	CH ₃	CH ₃	CH ₂ CH ₂	PhCH ₂
S-516	S	CH ₃	CH ₃	CH ₂ CH ₂	Ph(CH ₃)CH
S-517	S	CH ₃	CH ₃	CH ₂ CH ₂	Ph(CH ₃) ₂ C
S-518	S	CH ₃	CH ₃	CH ₂ CH ₂	Ph
S-519	S	CH ₃	CH ₃	CH ₂ CH ₂	2-Cl-Ph
S-520	S	CH ₃	CH ₃	CH ₂ CH ₂	3-Cl-Ph
S-521	S	CH ₃	CH ₃	CH ₂ CH ₂	4-Cl-Ph
S-522	S	CH ₃	CH ₃	CH ₂ CH ₂	4-CF ₃ O-Ph
S-523	S	CH ₃	CH ₃	CH ₂ CH ₂	4-(4-CF ₃ -PhO)-Ph
S-524	S	OCH ₃	H	CH ₂ CH ₂	CH ₃
S-525	S	OCH ₃	H	CH ₂ CH ₂	C ₂ H ₅
S-526	S	OCH ₃	H	CH ₂ CH ₂	n-C ₃ H ₇
S-527	S	OCH ₃	H	CH ₂ CH ₂	iso-C ₃ H ₇
S-528	S	OCH ₃	H	CH ₂ CH ₂	n-C ₄ H ₉
S-529	S	OCH ₃	H	CH ₂ CH ₂	iso-C ₄ H ₉
S-530	S	OCH ₃	H	CH ₂ CH ₂	sec-C ₄ H ₉
S-531	S	OCH ₃	H	CH ₂ CH ₂	tert-C ₄ H ₉
S-532	S	OCH ₃	H	CH ₂ CH ₂	n-C ₅ H ₁₁
S-533	S	OCH ₃	H	CH ₂ CH ₂	n-C ₆ H ₁₃
S-534	S	OCH ₃	H	CH ₂ CH ₂	cyclo-C ₃ H ₅
S-535	S	OCH ₃	H	CH ₂ CH ₂	cyclo-C ₅ H ₉
S-536	S	OCH ₃	H	CH ₂ CH ₂	cyclo-C ₆ H ₁₁

Compound	U	R ⁷	R ⁸	W	R ⁴
S-537	S	OCH ₃	H	CH ₂ CH ₂	CH ₂ =CHCH ₂
S-538	S	OCH ₃	H	CH ₂ CH ₂	CHCCH ₂
S-539	S	OCH ₃	H	CH ₂ CH ₂	PhCH ₂
S-540	S	OCH ₃	H	CH ₂ CH ₂	Ph(CH ₃)CH
S-541	S	OCH ₃	H	CH ₂ CH ₂	Ph(CH ₃) ₂ C
S-542	S	OCH ₃	H	CH ₂ CH ₂	Ph
S-543	S	OCH ₃	H	CH ₂ CH ₂	2-Cl-Ph
S-544	S	OCH ₃	H	CH ₂ CH ₂	3-Cl-Ph
S-545	S	OCH ₃	H	CH ₂ CH ₂	4-Cl-Ph
S-546	S	OCH ₃	H	CH ₂ CH ₂	4-CF ₃ O-Ph
S-547	S	OCH ₃	H	CH ₂ CH ₂	4-(4-CF ₃ -PhO)-Ph
S-548	O	H	H	CH ₂	CH ₃ O
S-549	O	H	H	CH ₂	PhCH ₂ O
S-550	O	H	H	CH(CH ₃)	H
S-551	O	H	H	CH(C ₂ H ₅)	H
S-552	O	H	H	CH(C ₂ H ₅)	PhCH ₂
S-553	O	H	H	CHPh	H
S-554	O	H	H	CHPh	CH ₃
S-555	O	H	H	CHPh	PhCH ₂
S-556	O	CH ₃	H	CH ₂	H
S-557	O	Ph	H	CH ₂	H
S-558	O	Ph	H	CH ₂	CH ₃
S-559	O	Ph	H	CH ₂	PhCH ₂

Table 5

Compounds of formula (1B):



(1B)

5

Compound	U	X	Y	R ⁴
T-1	O	CH	CH	H
T-2	O	CH	CH	n-C ₃ H ₇
T-3	O	CH	CH	iso-C ₃ H ₇
T-4	O	CH	CH	n-C ₄ H ₉
T-5	O	CH	CH	iso-C ₄ H ₉
T-6	O	CH	CH	sec-C ₄ H ₉
T-7	O	CH	CH	tert-C ₄ H ₉

Compound	U	X	Y	R ⁴
T-8	O	CH	CH	n-C ₅ H ₁₁
T-9	O	CH	CH	n-C ₆ H ₁₃
T-10	O	CH	CH	cyclo-C ₃ H ₅
T-11	O	CH	CH	cyclo-C ₅ H ₉
T-12	O	CH	CH	cyclo-C ₆ H ₁₁
T-13	O	CH	CH	CH ₂ =CHCH ₂
T-14	O	CH	CH	CH ₂ CCH
T-15	O	CH	CH	PhCH ₂
T-16	O	CH	CH	Ph(CH ₃)CH
T-17	O	CH	CH	Ph
T-18	O	CH	CH	2-Cl-Ph
T-19	O	CH	CH	3-Cl-Ph
T-20	O	CH	CH	4-Cl-Ph
T-21	O	CH	CH	4-CF ₃ O-Ph
T-22	O	CH	CH	4-(4-CF ₃ -PhO)-Ph
T-23	O	CH	N	H
T-24	O	CH	N	CH ₃
T-25	O	CH	N	n-C ₄ H ₉
T-26	O	CH	N	iso-C ₄ H ₉
T-27	O	CH	N	sec-C ₄ H ₉
T-28	O	CH	N	tert-C ₄ H ₉
T-29	O	CH	N	n-C ₅ H ₁₁
T-30	O	CH	N	n-C ₆ H ₁₃
T-31	O	CH	N	cyclo-C ₃ H ₅
T-32	O	CH	N	cyclo-C ₅ H ₉
T-33	O	CH	N	cyclo-C ₆ H ₁₁
T-34	O	CH	N	CH ₂ =CHCH ₂
T-35	O	CH	N	CH ₂ CCH
T-36	O	CH	N	PhCH ₂
T-37	O	CH	N	Ph(CH ₃)CH
T-38	O	CH	N	Ph
T-39	O	CH	N	2-Cl-Ph
T-40	O	CH	N	3-Cl-Ph
T-41	O	CH	N	4-Cl-Ph
T-42	O	CH	N	4-CF ₃ O-Ph
T-43	O	CH	N	4-(4-CF ₃ -PhO)-Ph
T-44	O	N	N	H
T-45	O	N	N	CH ₃
T-46	O	N	N	C ₂ H ₅
T-47	O	N	N	n-C ₅ H ₁₁
T-48	O	N	N	n-C ₆ H ₁₃
T-49	O	N	N	cyclo-C ₃ H ₅

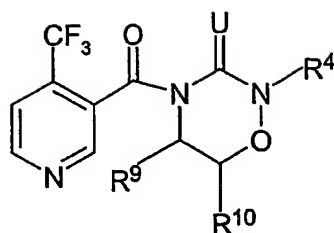
Compound	U	X	Y	R ⁴
T-50	O	N	N	cyclo-C ₅ H ₉
T-51	O	N	N	cyclo-C ₆ H ₁₁
T-52	O	N	N	CH ₂ =CHCH ₂
T-53	O	N	N	CH ₂ CCH
T-54	O	N	N	PhCH ₂
T-55	O	N	N	Ph(CH ₃)CH
T-56	O	N	N	Ph
T-57	O	N	N	2-Cl-Ph
T-58	O	N	N	3-Cl-Ph
T-59	O	N	N	4-Cl-Ph
T-60	O	N	N	4-CF ₃ O-Ph
T-61	O	N	N	4-(4-CF ₃ -PhO)-Ph
T-62	S	CH	CH	H
T-63	S	CH	CH	n-C ₃ H ₇
T-64	S	CH	CH	iso-C ₃ H ₇
T-65	S	CH	CH	n-C ₄ H ₉
T-66	S	CH	CH	iso-C ₄ H ₉
T-67	S	CH	CH	sec-C ₄ H ₉
T-68	S	CH	CH	tert-C ₄ H ₉
T-69	S	CH	CH	n-C ₅ H ₁₁
T-70	S	CH	CH	n-C ₆ H ₁₃
T-71	S	CH	CH	cyclo-C ₃ H ₅
T-72	S	CH	CH	cyclo-C ₅ H ₉
T-73	S	CH	CH	cyclo-C ₆ H ₁₁
T-74	S	CH	CH	CH ₂ =CHCH ₂
T-75	S	CH	CH	CH ₂ CCH
T-76	S	CH	CH	PhCH ₂
T-77	S	CH	CH	Ph(CH ₃)CH
T-78	S	CH	CH	Ph
T-79	S	CH	CH	2-Cl-Ph
T-80	S	CH	CH	3-Cl-Ph
T-81	S	CH	CH	4-Cl-Ph
T-82	S	CH	CH	4-CF ₃ O-Ph
T-83	S	CH	CH	4-(4-CF ₃ -PhO)-Ph
T-84	S	CH	N	H
T-85	S	CH	N	CH ₃
T-86	S	CH	N	n-C ₄ H ₉
T-87	S	CH	N	iso-C ₄ H ₉
T-88	S	CH	N	sec-C ₄ H ₉
T-89	S	CH	N	tert-C ₄ H ₉
T-90	S	CH	N	n-C ₅ H ₁₁
T-91	S	CH	N	n-C ₆ H ₁₃

WO 03/097604

PCT/EP03/04714

Table 6

Compounds of formula (1C):



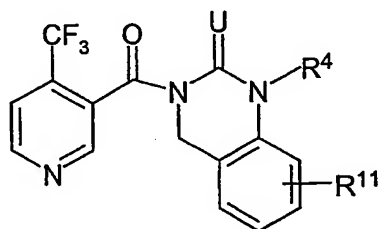
(1C)

Compound	U	R ⁴	R ⁹	R ¹⁰
U-1	O	H	H	H
U-2	O	n-C ₃ H ₇	H	H
U-3	O	iso-C ₃ H ₇	H	H
U-4	O	n-C ₄ H ₉	H	H
U-5	O	iso-C ₄ H ₉	H	H
U-6	O	sec-C ₄ H ₉	H	H
U-7	O	tert-C ₄ H ₉	H	H
U-8	O	n-C ₅ H ₁₁	H	H
U-9	O	n-C ₆ H ₁₃	H	H
U-10	O	cyclo-C ₃ H ₅	H	H
U-11	O	cyclo-C ₅ H ₉	H	H
U-12	O	cyclo-C ₆ H ₁₁	H	H
U-13	O	CH ₂ CH=CH ₂	H	H
U-14	O	CH ₂ C(CH ₃)=CH ₂	H	H
U-15	O	CH(CH ₃)CH=CH ₂	H	H
U-16	O	CH ₂ CH=CHCH ₃	H	H
U-17	O	CH ₂ CCH	H	H
U-18	O	CH ₂ CCCH ₃	H	H
U-19	O	CH(CH ₃)CCH	H	H
U-20	O	PhCH ₂	H	H
U-21	O	Ph(CH ₃)CH	H	H
U-22	O	Ph(CH ₃) ₂ C	H	H
U-23	O	Ph	H	H
U-24	O	2-Cl-Ph	H	H
U-25	O	3-Cl-Ph	H	H
U-26	O	4-Cl-Ph	H	H
U-27	S	H	H	H
U-28	S	n-C ₃ H ₇	H	H
U-29	S	iso-C ₃ H ₇	H	H
U-30	S	n-C ₄ H ₉	H	H
U-31	S	iso-C ₄ H ₉	H	H

Compound	U	R ⁴	R ⁹	R ¹⁰
U-32	S	sec-C ₄ H ₉	H	H
U-33	S	tert-C ₄ H ₉	H	H
U-34	S	n-C ₅ H ₁₁	H	H
U-35	S	n-C ₆ H ₁₃	H	H
U-36	S	cyclo-C ₃ H ₅	H	H
U-37	S	cyclo-C ₅ H ₉	H	H
U-38	S	cyclo-C ₆ H ₁₁	H	H
U-39	S	CH ₂ CH=CH ₂	H	H
U-40	S	CH ₂ C(CH ₃)=CH ₂	H	H
U-41	S	CH(CH ₃)CH=CH ₂	H	H
U-42	S	CH ₂ CH=CHCH ₃	H	H
U-43	S	CH ₂ CCH	H	H
U-44	S	CH ₂ CCCH ₃	H	H
U-45	S	CH(CH ₃)CCH	H	H
U-46	S	PhCH ₂	H	H
U-47	S	Ph(CH ₃)CH	H	H
U-48	S	Ph(CH ₃) ₂ C	H	H
U-49	S	Ph	H	H
U-50	S	2-Cl-Ph	H	H
U-51	S	3-Cl-Ph	H	H
U-52	S	4-Cl-Ph	H	H

Table 7

Compounds of formula (1D):



(1D)

5

Compound	U	R ⁴	R ¹¹
V-1	O	H	H
V-2	O	CH ₃	H
V-3	O	C ₂ H ₅	H
V-4	O	n-C ₃ H ₇	H
V-5	O	iso-C ₃ H ₇	H
V-6	O	n-C ₄ H ₉	H

Compound	U	R ⁴	R ¹¹
V-7	O	iso-C ₄ H ₉	H
V-8	O	sec-C ₄ H ₉	H
V-9	O	tert-C ₄ H ₉	H
V-10	O	n-C ₅ H ₁₁	H
V-11	O	n-C ₆ H ₁₃	H
V-12	O	cyclo-C ₃ H ₅	H
V-13	O	cyclo-C ₅ H ₉	H
V-14	O	cyclo-C ₆ H ₁₁	H
V-15	O	CH ₂ CH=CH ₂	H
V-16	O	CH ₂ C(CH ₃)=CH ₂	H
V-17	O	CH(CH ₃)CH=CH ₂	H
V-18	O	CH ₂ CH=CHCH ₃	H
V-19	O	CH ₂ CCH	H
V-20	O	CH ₂ CCCH ₃	H
V-21	O	CH(CH ₃)CCH	H
V-22	O	PhCH ₂	H
V-23	O	Ph(CH ₃)CH	H
V-24	O	Ph(CH ₃) ₂ C	H
V-25	O	Ph	H
V-26	O	2-Cl-Ph	H
V-27	O	3-Cl-Ph	H
V-28	O	4-Cl-Ph	H
V-29	S	H	H
V-30	S	CH ₃	H
V-31	S	C ₂ H ₅	H
V-32	S	n-C ₃ H ₇	H
V-33	S	iso-C ₃ H ₇	H
V-34	S	n-C ₄ H ₉	H
V-35	S	iso-C ₄ H ₉	H
V-36	S	sec-C ₄ H ₉	H
V-37	S	tert-C ₄ H ₉	H
V-38	S	n-C ₅ H ₁₁	H
V-39	S	n-C ₆ H ₁₃	H
V-40	S	cyclo-C ₃ H ₅	H
V-41	S	cyclo-C ₅ H ₉	H
V-42	S	cyclo-C ₆ H ₁₁	H
V-43	S	CH ₂ CH=CH ₂	H
V-44	S	CH ₂ C(CH ₃)=CH ₂	H
V-45	S	CH(CH ₃)CH=CH ₂	H
V-46	S	CH ₂ CH=CHCH ₃	H
V-47	S	CH ₂ CCH	H
V-48	S	CH ₂ CCCH ₃	H

Compound	U	R ⁴	R ¹¹
V-49	S	CH(CH ₃)CCH	H
V-50	S	PhCH ₂	H
V-51	S	Ph(CH ₃)CH	H
V-52	S	Ph(CH ₃) ₂ C	H
V-53	S	Ph	H
V-54	S	2-Cl-Ph	H
V-55	S	3-Cl-Ph	H
V-56	S	4-Cl-Ph	H

Table 8

Compounds of formula (I) wherein R¹ is -C(=U)NR³R⁴, U is NR¹⁸ and m is zero.

Compound	R ³	R ⁴	R ²	R ¹⁸
W-1	CH ₃	H	H	H
W-2	C ₂ H ₅	H	H	H
W-3	n-C ₃ H ₇	H	H	H
W-4	iso-C ₃ H ₇	H	H	H
W-5	n-C ₄ H ₉	H	H	H
W-6	iso-C ₄ H ₉	H	H	H
W-7	tert-C ₄ H ₉	H	H	H
W-8	n-C ₅ H ₁₁	H	H	H
W-9	(CH ₃) ₃ CCCH ₂	H	H	H
W-10	n-C ₆ H ₁₃	H	H	H
W-11	CH ₂ =CHCH ₂	H	H	H
W-12	CHCCH ₂	H	H	H
W-13	cyclo-C ₃ H ₅	H	H	H
W-14	cyclo-C ₅ H ₉	H	H	H
W-15	cyclo-C ₆ H ₁₁	H	H	H
W-16	PhCH ₂	H	H	H
W-17	PhCH(CH ₃)	H	H	H
W-18	CH ₃ NH	H	H	H
W-19	C ₂ H ₅ NH	H	H	H
W-20	n-C ₃ H ₇ NH	H	H	H
W-21	iso-C ₃ H ₇ NH	H	H	H
W-22	n-C ₄ H ₉ NH	H	H	H
W-23	tert-C ₄ H ₉ NH	H	H	H
W-24	n-C ₅ H ₁₁ NH	H	H	H
W-25	n-C ₆ H ₁₃ NH	H	H	H
W-26	PhCH ₂ NH	H	H	H
W-27	PhNH	H	H	H
W-28	Ph	H	H	H
W-29	2-F-Ph	H	H	H
W-30	3-F-Ph	H	H	H

Compound	R ³	R ⁴	R ²	R ¹⁸
W-31	4-F-Ph	H	H	H
W-32	2-Cl-Ph	H	H	H
W-33	3-Cl-Ph	H	H	H
W-34	4-Cl-Ph	H	H	H
W-35	2-CF ₃ -Ph	H	H	H
W-36	3-CF ₃ -Ph	H	H	H
W-37	4-CF ₃ -Ph	H	H	H
W-38	2-CH ₃ -Ph	H	H	H
W-39	3-CH ₃ -Ph	H	H	H
W-40	4-CH ₃ -Ph	H	H	H
W-41	2-CH ₃ O-Ph	H	H	H
W-42	3-CH ₃ O-Ph	H	H	H
W-43	4-CH ₃ O-Ph	H	H	H
W-44	CF ₃ CH ₂	H	H	H
W-45	ClCH ₂ CH ₂	H	H	H
W-46	ClCH ₂ CH ₂ CH ₂	H	H	H
W-47	CH ₃ OCH ₂ CH ₂	H	H	H
W-48	CH ₃ CH ₂ OCH ₂ CH ₂	H	H	H
W-49	CH ₃ OCH ₂ CH ₂ CH ₂	H	H	H
W-50	C ₂ H ₅ OCH ₂ CH ₂ CH ₂	H	H	H
W-51	n-C ₄ H ₉ OCH ₂ CH ₂ CH ₂	H	H	H
W-52	CH ₃ OCH(CH ₃)CH ₂ CH ₂	H	H	H
W-53	(CH ₃ O) ₂ CHCH ₂	H	H	H
W-54	HOCH ₂ CH ₂	H	H	H
W-55	HOCH ₂ CH ₂ CH ₂	H	H	H
W-56	CH ₃ SCH ₂ CH ₂	H	H	H
W-57	CH ₃ CH ₂ SCH ₂ CH ₂	H	H	H
W-58	CH ₃ SCH ₂ CH ₂ CH ₂	H	H	H
W-59	C ₂ H ₅ SCH ₂ CH ₂ CH ₂	H	H	H
W-60	CH ₂ CH ₂ CH ₂ CH ₂		H	H
W-61	CH ₂ CH ₂ CH ₂ CH ₂ CH ₂		H	H
W-62	CH ₂ CH ₂ OCH ₂ CH ₂		H	H
W-63	CH ₂ CH ₂ SCH ₂ CH ₂		H	H
W-64	CH ₂ CH ₂ NHCH ₂ CH ₂		H	H
W-65	CH ₂ CH ₂ N(CH ₃)CH ₂ CH ₂		H	H
W-66	N=CHCH ₂ CH ₂		H	H
W-67	N=CHCH=CH		H	H
W-68	CH ₃	CH ₃	H	H
W-69	C ₂ H ₅	CH ₃	H	H
W-70	n-C ₃ H ₇	CH ₃	H	H
W-71	iso-C ₃ H ₇	CH ₃	H	H
W-72	n-C ₄ H ₉	CH ₃	H	H
W-73	iso-C ₄ H ₉	CH ₃	H	H

Compound	R ³	R ⁴	R ²	R ¹⁸
W-74	tert-C ₄ H ₉	CH ₃	H	H
W-75	n-C ₅ H ₁₁	CH ₃	H	H
W-76	n-C ₆ H ₁₃	CH ₃	H	H
W-77	CH ₂ =CHCH ₂	CH ₃	H	H
W-78	CHCCH ₂	CH ₃	H	H
W-79	cyclo-C ₃ H ₅	CH ₃	H	H
W-80	cyclo-C ₅ H ₉	CH ₃	H	H
W-81	cyclo-C ₆ H ₁₁	CH ₃	H	H
W-82	PhCH ₂	CH ₃	H	H
W-83	CH ₃ NH	CH ₃	H	H
W-84	C ₂ H ₅ NH	CH ₃	H	H
W-85	n-C ₃ H ₇ NH	CH ₃	H	H
W-86	iso-C ₃ H ₇ NH	CH ₃	H	H
W-87	n-C ₄ H ₉ NH	CH ₃	H	H
W-88	tert-C ₄ H ₉ NH	CH ₃	H	H
W-89	n-C ₅ H ₁₁ NH	CH ₃	H	H
W-90	n-C ₆ H ₁₃ NH	CH ₃	H	H
W-91	PhCH ₂ NH	CH ₃	H	H
W-92	PhNH	CH ₃	H	H
W-93	Ph	CH ₃	H	H
W-94	2-F-Ph	CH ₃	H	H
W-95	3-F-Ph	CH ₃	H	H
W-96	4-F-Ph	CH ₃	H	H
W-97	2-Cl-Ph	CH ₃	H	H
W-98	3-Cl-Ph	CH ₃	H	H
W-99	4-Cl-Ph	CH ₃	H	H
W-100	2-CF ₃ -Ph	CH ₃	H	H
W-101	3-CF ₃ -Ph	CH ₃	H	H
W-102	4-CF ₃ -Ph	CH ₃	H	H
W-103	2-CH ₃ -Ph	CH ₃	H	H
W-104	3-CH ₃ -Ph	CH ₃	H	H
W-105	4-CH ₃ -Ph	CH ₃	H	H
W-106	2-CH ₃ O-Ph	CH ₃	H	H
W-107	3-CH ₃ O-Ph	CH ₃	H	H
W-108	4-CH ₃ O-Ph	CH ₃	H	H
W-109	CF ₃ CH ₂	CH ₃	H	H
W-110	ClCH ₂ CH ₂	CH ₃	H	H
W-111	ClCH ₂ CH ₂ CH ₂	CH ₃	H	H
W-112	CH ₃ OCH ₂ CH ₂	CH ₃	H	H
W-113	CH ₃ CH ₂ OCH ₂ CH ₂	CH ₃	H	H
W-114	CH ₃ OCH ₂ CH ₂ CH ₂	CH ₃	H	H
W-115	C ₂ H ₅ OCH ₂ CH ₂ CH ₂	CH ₃	H	H
W-116	n-C ₄ H ₉ OCH ₂ CH ₂ CH ₂	CH ₃	H	H

Compound	R ³	R ⁴	R ²	R ¹⁸
W-117	CH ₃ OCH(CH ₃)CH ₂ CH ₂	CH ₃	H	H
W-118	(CH ₃ O) ₂ CHCH ₂	CH ₃	H	H
W-119	HOCH ₂ CH ₂	CH ₃	H	H
W-120	HOCH ₂ CH ₂ CH ₂	CH ₃	H	H
W-121	CH ₃	C ₂ H ₅	H	H
W-122	C ₂ H ₅	C ₂ H ₅	H	H
W-123	n-C ₃ H ₇	C ₂ H ₅	H	H
W-124	iso-C ₃ H ₇	C ₂ H ₅	H	H
W-125	CH ₂ =CHCH ₂	C ₂ H ₅	H	H
W-126	CHCCH ₂	C ₂ H ₅	H	H
W-127	cyclo-C ₃ H ₅	C ₂ H ₅	H	H
W-128	PhCH ₂	C ₂ H ₅	H	H
W-129	CH ₃ NH	C ₂ H ₅	H	H
W-130	C ₂ H ₅ NH	C ₂ H ₅	H	H
W-131	PhCH ₂ NH	C ₂ H ₅	H	H
W-132	PhNH	C ₂ H ₅	H	H
W-133	Ph	C ₂ H ₅	H	H
W-134	2-Cl-Ph	C ₂ H ₅	H	H
W-135	3-Cl-Ph	C ₂ H ₅	H	H
W-136	4-Cl-Ph	C ₂ H ₅	H	H
W-137	2-CF ₃ -Ph	C ₂ H ₅	H	H
W-138	3-CF ₃ -Ph	C ₂ H ₅	H	H
W-139	4-CF ₃ -Ph	C ₂ H ₅	H	H
W-140	2-CH ₃ O-Ph	C ₂ H ₅	H	H
W-141	3-CH ₃ O-Ph	C ₂ H ₅	H	H
W-142	4-CH ₃ O-Ph	C ₂ H ₅	H	H
W-143	CF ₃ CH ₂	C ₂ H ₅	H	H
W-144	ClCH ₂ CH ₂	C ₂ H ₅	H	H
W-145	ClCH ₂ CH ₂ CH ₂	C ₂ H ₅	H	H
W-146	CH ₃ OCH ₂ CH ₂	C ₂ H ₅	H	H
W-147	CH ₃ CH ₂ OCH ₂ CH ₂	C ₂ H ₅	H	H
W-148	CH ₃ OCH ₂ CH ₂ CH ₂	C ₂ H ₅	H	H
W-149	C ₂ H ₅ OCH ₂ CH ₂ CH ₂	C ₂ H ₅	H	H
W-150	n-C ₄ H ₉ OCH ₂ CH ₂ CH ₂	C ₂ H ₅	H	H
W-151	CH ₃ OCH(CH ₃)CH ₂ CH ₂	C ₂ H ₅	H	H
W-152	(CH ₃ O) ₂ CHCH ₂	C ₂ H ₅	H	H
W-153	HOCH ₂ CH ₂	C ₂ H ₅	H	H
W-154	HOCH ₂ CH ₂ CH ₂	C ₂ H ₅	H	H
W-155	CH ₃	H	H	CH ₃
W-156	C ₂ H ₅	H	H	CH ₃
W-157	n-C ₃ H ₇	H	H	CH ₃
W-158	iso-C ₃ H ₇	H	H	CH ₃
W-159	tert-C ₄ H ₉	H	H	CH ₃

Compound	R ³	R ⁴	R ²	R ¹⁸
W-160	CH ₂ =CHCH ₂	H	H	CH ₃
W-161	CHCCH ₂	H	H	CH ₃
W-162	cyclo-C ₃ H ₅	H	H	CH ₃
W-163	PhCH ₂	H	H	CH ₃
W-164	CH ₃ NH	H	H	CH ₃
W-165	C ₂ H ₅ NH	H	H	CH ₃
W-166	n-C ₃ H ₇ NH	H	H	CH ₃
W-167	iso-C ₃ H ₇ NH	H	H	CH ₃
W-168	PhCH ₂ NH	H	H	CH ₃
W-169	PhNH	H	H	CH ₃
W-170	Ph	H	H	CH ₃
W-171	2-Cl-Ph	H	H	CH ₃
W-172	3-Cl-Ph	H	H	CH ₃
W-173	4-Cl-Ph	H	H	CH ₃
W-174	CH ₃ OCH ₂ CH ₂	H	H	CH ₃
W-175	CH ₃ CH ₂ OCH ₂ CH ₂	H	H	CH ₃
W-176	CH ₃ OCH ₂ CH ₂ CH ₂	H	H	CH ₃
W-177	C ₂ H ₅ OCH ₂ CH ₂ CH ₂	H	H	CH ₃
W-178	n-C ₄ H ₉ OCH ₂ CH ₂ CH ₂	H	H	CH ₃
W-179	CH ₃ OCH(CH ₃)CH ₂ CH ₂	H	H	CH ₃
W-180	(CH ₃ O) ₂ CHCH ₂	H	H	CH ₃
W-181	HOCH ₂ CH ₂	H	H	CH ₃
W-182	HOCH ₂ CH ₂ CH ₂	H	H	CH ₃
W-183	CH ₂ CH ₂ CH ₂ CH ₂		H	CH ₃
W-184	CH ₂ CH ₂ CH ₂ CH ₂ CH ₂		H	CH ₃
W-185	CH ₂ CH ₂ OCH ₂ CH ₂		H	CH ₃
W-186	CH ₂ CH ₂ SCH ₂ CH ₂		H	CH ₃
W-187	CH ₂ CH ₂ NHCH ₂ CH ₂		H	CH ₃
W-188	CH ₂ CH ₂ N(CH ₃)CH ₂ CH ₂		H	CH ₃
W-189	N=CHCH ₂ CH ₂		H	CH ₃
W-190	CH ₃	H	H	tert-C ₄ H ₉
W-191	C ₂ H ₅	H	H	tert-C ₄ H ₉
W-192	n-C ₃ H ₇	H	H	tert-C ₄ H ₉
W-193	iso-C ₃ H ₇	H	H	tert-C ₄ H ₉
W-194	tert-C ₄ H ₉	H	H	tert-C ₄ H ₉
W-195	CH ₂ =CHCH ₂	H	H	tert-C ₄ H ₉
W-196	CHCCH ₂	H	H	tert-C ₄ H ₉
W-197	cyclo-C ₃ H ₅	H	H	tert-C ₄ H ₉
W-198	PhCH ₂	H	H	tert-C ₄ H ₉
W-199	CH ₃ NH	H	H	tert-C ₄ H ₉
W-200	PhCH ₂ NH	H	H	tert-C ₄ H ₉
W-201	PhNH	H	H	tert-C ₄ H ₉
W-202	Ph	H	H	tert-C ₄ H ₉

Compound	R ³	R ⁴	R ²	R ¹⁸
W-203	2-Cl-Ph	H	H	tert-C4H9
W-204	3-Cl-Ph	H	H	tert-C4H9
W-205	4-Cl-Ph	H	H	tert-C4H9
W-206	CH3OCH2CH2	H	H	tert-C4H9
W-207	CH3CH2OCH2CH2	H	H	tert-C4H9
W-208	CH3OCH2CH2CH2	H	H	tert-C4H9
W-209	C2H5OCH2CH2CH2	H	H	tert-C4H9
W-210	(CH3O)2CHCH2	H	H	tert-C4H9
W-211	HOCH2CH2	H	H	tert-C4H9
W-212	HOCH2CH2CH2	H	H	tert-C4H9
W-213	CH2CH2CH2CH2	H	H	tert-C4H9
W-214	CH2CH2CH2CH2CH2	H	H	tert-C4H9
W-215	CH2CH2OCH2CH2	H	H	tert-C4H9
W-216	CH2CH2SCH2CH2	H	H	tert-C4H9
W-217	CH2CH2NHCH2CH2	H	H	tert-C4H9
W-218	CH2CH2N(CH3)CH2CH2	H	H	tert-C4H9
W-219	N=CHCH2CH2	H	H	tert-C4H9
W-220	CH3	H	H	OH
W-221	C2H5	H	H	OH
W-222	n-C3H7	H	H	OH
W-223	iso-C3H7	H	H	OH
W-224	tert-C4H9	H	H	OH
W-225	CH2=CHCH2	H	H	OH
W-226	CHCCH2	H	H	OH
W-227	cyclo-C3H5	H	H	OH
W-228	PhCH2	H	H	OH
W-229	CH3NH	H	H	OH
W-230	C2H5NH	H	H	OH
W-231	PhCH2NH	H	H	OH
W-232	PhNH	H	H	OH
W-233	Ph	H	H	OH
W-234	2-Cl-Ph	H	H	OH
W-235	3-Cl-Ph	H	H	OH
W-236	4-Cl-Ph	H	H	OH
W-237	CH3OCH2CH2	H	H	OH
W-238	CH3CH2OCH2CH2	H	H	OH
W-239	CH3OCH2CH2CH2	H	H	OH
W-240	C2H5OCH2CH2CH2	H	H	OH
W-241	n-C4H9OCH2CH2CH2	H	H	OH
W-242	CH3OCH(CH3)CH2CH2	H	H	OH
W-243	(CH3O)2CHCH2	H	H	OH
W-244	HOCH2CH2	H	H	OH
W-245	HOCH2CH2CH2	H	H	OH

Compound	R ³	R ⁴	R ²	R ¹⁸
W-246	CH ₂ CH ₂ CH ₂ CH ₂		H	OH
W-247	CH ₂ CH ₂ CH ₂ CH ₂ CH ₂		H	OH
W-248	CH ₂ CH ₂ OCH ₂ CH ₂		H	OH
W-249	CH ₂ CH ₂ SCH ₂ CH ₂		H	OH
W-250	CH ₂ CH ₂ NHCH ₂ CH ₂		H	OH
W-251	CH ₂ CH ₂ N(CH ₃)CH ₂ CH ₂		H	OH
W-252	N=CHCH ₂ CH ₂		H	OH
W-253	N=CHCH=CH		H	OH
W-254	CH ₃	H	H	CH ₃ O
W-255	C ₂ H ₅	H	H	CH ₃ O
W-256	n-C ₃ H ₇	H	H	CH ₃ O
W-257	iso-C ₃ H ₇	H	H	CH ₃ O
W-258	tert-C ₄ H ₉	H	H	CH ₃ O
W-259	CH ₂ =CHCH ₂	H	H	CH ₃ O
W-260	CHCCH ₂	H	H	CH ₃ O
W-261	cyclo-C ₃ H ₅	H	H	CH ₃ O
W-262	PhCH ₂	H	H	CH ₃ O
W-263	CH ₃ NH	H	H	CH ₃ O
W-264	C ₂ H ₅ NH	H	H	CH ₃ O
W-265	PhCH ₂ NH	H	H	CH ₃ O
W-266	PhNH	H	H	CH ₃ O
W-267	Ph	H	H	CH ₃ O
W-268	2-Cl-Ph	H	H	CH ₃ O
W-269	3-Cl-Ph	H	H	CH ₃ O
W-270	4-Cl-Ph	H	H	CH ₃ O
W-271	CH ₃ OCH ₂ CH ₂	H	H	CH ₃ O
W-272	CH ₃ CH ₂ OCH ₂ CH ₂	H	H	CH ₃ O
W-273	CH ₃ OCH ₂ CH ₂ CH ₂	H	H	CH ₃ O
W-274	C ₂ H ₅ OCH ₂ CH ₂ CH ₂	H	H	CH ₃ O
W-275	n-C ₄ H ₉ OCH ₂ CH ₂ CH ₂	H	H	CH ₃ O
W-276	CH ₃ OCH(CH ₃)CH ₂ CH ₂	H	H	CH ₃ O
W-277	(CH ₃ O) ₂ CHCH ₂	H	H	CH ₃ O
W-278	HOCH ₂ CH ₂	H	H	CH ₃ O
W-279	HOCH ₂ CH ₂ CH ₂	H	H	CH ₃ O
W-280	CH ₃ SCH ₂ CH ₂	H	H	CH ₃ O
W-281	CH ₃ CH ₂ SCH ₂ CH ₂	H	H	CH ₃ O
W-282	CH ₃ SCH ₂ CH ₂ CH ₂	H	H	CH ₃ O
W-283	C ₂ H ₅ SCH ₂ CH ₂ CH ₂	H	H	CH ₃ O

Table 9

Compounds of formula (I) wherein R¹ is -C(=V)OR^{3a} and m is zero.

Compound	V	R ^{3a}	R ²
X-1	O	cyclo-C3H5	H
X-2	O	cyclo-C5H9	H
X-3	O	cyclo-C6H11	H
X-4	O	CH3NH	H
X-5	O	C2H5NH	H
X-6	O	n-C3H7NH	H
X-7	O	iso-C3H7NH	H
X-8	O	n-C4H9NH	H
X-9	O	tert-C4H9NH	H
X-10	O	n-C5H11NH	H
X-11	O	n-C6H13NH	H
X-12	O	PhCH2NH	H
X-13	O	PhNH	H
X-14	O	CF3CH2	H
X-15	O	ClCH2CH2	H
X-16	O	ClCH2CH2CH2	H
X-17	O	CH3OCH2CH2	H
X-18	O	CH3CH2OCH2CH2	H
X-19	O	CH3OCH2CH2CH2	H
X-20	O	C2H5OCH2CH2CH2	H
X-21	O	n-C4H9OCH2CH2CH2	H
X-22	O	CH3OCH(CH3)CH2CH2	H
X-23	O	(CH3O)2CHCH2	H
X-24	O	HOCH2CH2	H
X-25	O	HOCH2CH2CH2	H
X-26	O	CH3SCH2CH2	H
X-27	O	CH3CH2SCH2CH2	H
X-28	O	CH3SCH2CH2CH2	H
X-29	O	C2H5SCH2CH2CH2	H
X-30	O	CH3(cyclo-C3H5)CH	H
X-31	O	NCCH2CH2	H
X-32	S	cyclo-C3H5	H
X-33	S	cyclo-C5H9	H
X-34	S	cyclo-C6H11	H
X-35	S	CH3NH	H
X-36	S	C2H5NH	H
X-37	S	n-C3H7NH	H
X-38	S	iso-C3H7NH	H
X-39	S	n-C4H9NH	H
X-40	S	tert-C4H9NH	H

Compound	V	R ^{3a}	R ²
X-41	S	n-C ₅ H ₁₁ NH	H
X-42	S	n-C ₆ H ₁₃ NH	H
X-43	S	PhCH ₂ NH	H
X-44	S	PhNH	H
X-45	S	CF ₃ CH ₂	H
X-46	S	ClCH ₂ CH ₂	H
X-47	S	ClCH ₂ CH ₂ CH ₂	H
X-48	S	CH ₃ OCH ₂ CH ₂	H
X-49	S	CH ₃ CH ₂ OCH ₂ CH ₂	H
X-50	S	CH ₃ OCH ₂ CH ₂ CH ₂	H
X-51	S	C ₂ H ₅ OCH ₂ CH ₂ CH ₂	H
X-52	S	n-C ₄ H ₉ OCH ₂ CH ₂ CH ₂	H
X-53	S	CH ₃ OCH(CH ₃)CH ₂ CH ₂	H
X-54	S	(CH ₃ O) ₂ CHCH ₂	H
X-55	S	HOCH ₂ CH ₂	H
X-56	S	HOCH ₂ CH ₂ CH ₂	H
X-57	S	CH ₃ SCH ₂ CH ₂	H
X-58	S	CH ₃ CH ₂ SCH ₂ CH ₂	H
X-59	S	CH ₃ SCH ₂ CH ₂ CH ₂	H
X-60	S	C ₂ H ₅ SCH ₂ CH ₂ CH ₂	H
X-61	S	CH ₃ (cyclo-C ₃ H ₅)CH	H
X-62	S	NCCH ₂ CH ₂	H
X-63	O	cyclo-C ₃ H ₅	CH ₃
X-64	O	cyclo-C ₅ H ₉	CH ₃
X-65	O	cyclo-C ₆ H ₁₁	CH ₃
X-66	O	CH ₃ NH	CH ₃
X-67	O	C ₂ H ₅ NH	CH ₃
X-68	O	n-C ₃ H ₇ NH	CH ₃
X-69	O	iso-C ₃ H ₇ NH	CH ₃
X-70	O	n-C ₄ H ₉ NH	CH ₃
X-71	O	tert-C ₄ H ₉ NH	CH ₃
X-72	O	n-C ₅ H ₁₁ NH	CH ₃
X-73	O	n-C ₆ H ₁₃ NH	CH ₃
X-74	O	PhCH ₂ NH	CH ₃
X-75	O	PhNH	CH ₃
X-76	O	CF ₃ CH ₂	CH ₃
X-77	O	ClCH ₂ CH ₂	CH ₃
X-78	O	ClCH ₂ CH ₂ CH ₂	CH ₃
X-79	O	CH ₃ OCH ₂ CH ₂	CH ₃
X-80	O	CH ₃ CH ₂ OCH ₂ CH ₂	CH ₃
X-81	O	CH ₃ OCH ₂ CH ₂ CH ₂	CH ₃
X-82	O	C ₂ H ₅ OCH ₂ CH ₂ CH ₂	CH ₃

Compound	V	R ^{3a}	R ²
X-83	O	n-C ₄ H ₉ OCH ₂ CH ₂ CH ₂	CH ₃
X-84	O	CH ₃ OCH(CH ₃)CH ₂ CH ₂	CH ₃
X-85	O	(CH ₃ O) ₂ CHCH ₂	CH ₃
X-86	O	HOCH ₂ CH ₂	CH ₃
X-87	O	HOCH ₂ CH ₂ CH ₂	CH ₃
X-88	O	CH ₃ SCH ₂ CH ₂	CH ₃
X-89	O	CH ₃ CH ₂ SCH ₂ CH ₂	CH ₃
X-90	O	CH ₃ SCH ₂ CH ₂ CH ₂	CH ₃
X-91	O	C ₂ H ₅ SCH ₂ CH ₂ CH ₂	CH ₃
X-92	O	CH ₃ (cyclo-C ₃ H ₅)CH	CH ₃
X-93	O	NCCH ₂ CH ₂	CH ₃
X-94	S	cyclo-C ₃ H ₅	CH ₃
X-95	S	cyclo-C ₅ H ₉	CH ₃
X-96	S	cyclo-C ₆ H ₁₁	CH ₃
X-97	S	CH ₃ NH	CH ₃
X-98	S	C ₂ H ₅ NH	CH ₃
X-99	S	n-C ₃ H ₇ NH	CH ₃
X-100	S	iso-C ₃ H ₇ NH	CH ₃
X-101	S	n-C ₄ H ₉ NH	CH ₃
X-102	S	tert-C ₄ H ₉ NH	CH ₃
X-103	S	n-C ₅ H ₁₁ NH	CH ₃
X-104	S	n-C ₆ H ₁₃ NH	CH ₃
X-105	S	PhCH ₂ NH	CH ₃
X-106	S	PhNH	CH ₃
X-107	S	CF ₃ CH ₂	CH ₃
X-108	S	ClCH ₂ CH ₂	CH ₃
X-109	S	ClCH ₂ CH ₂ CH ₂	CH ₃
X-110	S	CH ₃ OCH ₂ CH ₂	CH ₃
X-111	S	CH ₃ CH ₂ OCH ₂ CH ₂	CH ₃
X-112	S	CH ₃ OCH ₂ CH ₂ CH ₂	CH ₃
X-113	S	C ₂ H ₅ OCH ₂ CH ₂ CH ₂	CH ₃
X-114	S	n-C ₄ H ₉ OCH ₂ CH ₂ CH ₂	CH ₃
X-115	S	CH ₃ OCH(CH ₃)CH ₂ CH ₂	CH ₃
X-116	S	(CH ₃ O) ₂ CHCH ₂	CH ₃
X-117	S	HOCH ₂ CH ₂	CH ₃
X-118	S	HOCH ₂ CH ₂ CH ₂	CH ₃
X-119	S	CH ₃ SCH ₂ CH ₂	CH ₃
X-120	S	CH ₃ CH ₂ SCH ₂ CH ₂	CH ₃
X-121	S	CH ₃ SCH ₂ CH ₂ CH ₂	CH ₃
X-122	S	C ₂ H ₅ SCH ₂ CH ₂ CH ₂	CH ₃
X-123	S	CH ₃ (cyclo-C ₃ H ₅)CH	CH ₃
X-124	S	NCCH ₂ CH ₂	CH ₃

Compound	V	R ^{3a}	R ²
X-125	O	cyclo-C ₃ H ₅	C ₂ H ₅
X-126	O	CH ₃ NH	C ₂ H ₅
X-127	O	C ₂ H ₅ NH	C ₂ H ₅
X-128	O	n-C ₃ H ₇ NH	C ₂ H ₅
X-129	O	iso-C ₃ H ₇ NH	C ₂ H ₅
X-130	O	n-C ₄ H ₉ NH	C ₂ H ₅
X-131	O	tert-C ₄ H ₉ NH	C ₂ H ₅
X-132	O	PhCH ₂ NH	C ₂ H ₅
X-133	O	PhNH	C ₂ H ₅
X-134	O	CF ₃ CH ₂	C ₂ H ₅
X-135	O	ClCH ₂ CH ₂	C ₂ H ₅
X-136	O	ClCH ₂ CH ₂ CH ₂	C ₂ H ₅
X-137	O	CH ₃ OCH ₂ CH ₂	C ₂ H ₅
X-138	O	CH ₃ CH ₂ OCH ₂ CH ₂	C ₂ H ₅
X-139	O	CH ₃ OCH ₂ CH ₂ CH ₂	C ₂ H ₅
X-140	O	C ₂ H ₅ OCH ₂ CH ₂ CH ₂	C ₂ H ₅
X-141	O	n-C ₄ H ₉ OCH ₂ CH ₂ CH ₂	C ₂ H ₅
X-142	O	CH ₃ OCH(CH ₃)CH ₂ CH ₂	C ₂ H ₅
X-143	O	(CH ₃ O) ₂ CHCH ₂	C ₂ H ₅
X-144	O	HOCH ₂ CH ₂	C ₂ H ₅
X-145	O	HOCH ₂ CH ₂ CH ₂	C ₂ H ₅
X-146	O	CH ₃ (cyclo-C ₃ H ₅)CH	C ₂ H ₅
X-147	O	NCCH ₂ CH ₂	C ₂ H ₅
X-148	S	cyclo-C ₃ H ₅	C ₂ H ₅
X-149	S	CH ₃ NH	C ₂ H ₅
X-150	S	C ₂ H ₅ NH	C ₂ H ₅
X-151	S	n-C ₃ H ₇ NH	C ₂ H ₅
X-152	S	iso-C ₃ H ₇ NH	C ₂ H ₅
X-153	S	n-C ₄ H ₉ NH	C ₂ H ₅
X-154	S	tert-C ₄ H ₉ NH	C ₂ H ₅
X-155	S	PhCH ₂ NH	C ₂ H ₅
X-156	S	PhNH	C ₂ H ₅
X-157	S	CF ₃ CH ₂	C ₂ H ₅
X-158	S	ClCH ₂ CH ₂	C ₂ H ₅
X-159	S	ClCH ₂ CH ₂ CH ₂	C ₂ H ₅
X-160	S	CH ₃ OCH ₂ CH ₂	C ₂ H ₅
X-161	S	CH ₃ CH ₂ OCH ₂ CH ₂	C ₂ H ₅
X-162	S	CH ₃ OCH ₂ CH ₂ CH ₂	C ₂ H ₅
X-163	S	C ₂ H ₅ OCH ₂ CH ₂ CH ₂	C ₂ H ₅
X-164	S	n-C ₄ H ₉ OCH ₂ CH ₂ CH ₂	C ₂ H ₅
X-165	S	CH ₃ OCH(CH ₃)CH ₂ CH ₂	C ₂ H ₅
X-166	S	(CH ₃ O) ₂ CHCH ₂	C ₂ H ₅

Compound	V	R ^{3a}	R ²
X-167	S	HOCH ₂ CH ₂	C ₂ H ₅
X-168	S	HOCH ₂ CH ₂ CH ₂	C ₂ H ₅
X-169	S	CH ₃ (cyclo-C ₃ H ₅)CH	C ₂ H ₅
X-170	S	NCCH ₂ CH ₂	C ₂ H ₅

Table 10

¹H-NMR spectral details for representative Examples from the above Tables.

Nmr spectra were measured in deuteriochloroform unless otherwise stated.

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Cpd	¹ H-NMR
A-2	3.7-3.9(2H, m), 5.1-5.2(2H, m), 5.7-5.9(1H, m), 7.63(1H, d), 8.46(1H, brs), 8.83(1H, d), 8.91(1H, d), 10.70(1H, brs)
A-18	2.26(1H, t), 4.02(2H, dd), 7.66(1H, d), 8.34(1H, brs), 8.91(1H, s), 8.94(1H, d), 10.03(1H, brs)
A-24	0.5-0.6(1H, m), 0.7-0.8(1H, m), 2.6-2.7(1H, m), 7.65(1H, d), 8.33(1H, brs), 8.89(1H, s), 8.93(1H, d), 9.68(1H, brs)
A-26	9.83(1H,s), 8.93(1H,d), 8.89(1H,s), 8.40(1H,d), 7.65(1H,d), 4.12(1H,dt), 2.27(2H,m), 1.98(2H,m), 1.73(2H,m)
A-28	1.4-2.0(4H, m), 3.8-4.1(1H, m), 7.64(1H, d), 8.28(1H, brd), 8.90(1H, s), 8.91(1H, d)
A-30	1.2-1.4(5H, m), 1.5-1.9(5H, m), 3.4-3.6(1H, m), 7.63(1H, d), 8.22(1H, brd), 8.89(1H, s), 8.91(1H, d)
A-32	9.68(1H,s), 8.93(1H,d), 8.90(1H,s), 8.38(1H,t), 7.65(1H,d), 3.10(2H,t), 1.00(1H,m), 0.53(2H,m), 0.22(1H,m)
A-37	4.39(2H, d), 7.1-7.4(5H, m), 7.62(1H, d), 8.69(1H, m), 8.7-9.0(3H, m)
A-38	1.48(3H, d), 4.7-4.9(1H, m), 7.1-7.4(5H, m), 7.58(1H, d), 8.78(1H, brd), 8.86(1H, s), 8.90(1H, d)
A-39	2.80(2H, t), 3.42(2H, t), 7.1-7.4(5H, m), 7.62(1H, d), 8.3-8.5(1H, m), 8.89(1H, s), 8.90(1H, d)
A-62	3.80(3H, s), 4.31(1H, s), 6.86(2H, d), 7.16(2H, d), 7.62(1H, d), 8.62(1H,

Cpd	¹ H-NMR
	brs), 8.8-9.0(2H, m), 10.26(1H, s)
A-64	3.83(3H, s), 7.66(1H, d), 8.89(1H, s), 8.94(1H, d), 9.21(1H, brs), 10.60(1H, brs)
A-65	10.54(1H,s), 9.51(1H,s), 8.94(1H,d), 8.89(1H,s), 7.65(1H,d)4.01(2H,q), 1.28(3H,t)
A-67	10.39(1H), 8.90-9.05(2H), 7.81(1H), 4.18(1H), 1.24(6H)
A-71	1.35(9H, s), 7.62(1H, d), 8.66(1H, s), 8.78(1H, d)
A-74	10.58(1H,s), 10.04(1H,s), 8.92(1H,d), 8.89(1H,s), 7.65(1H,d), 5.94(1H,m), 5.38(1H,d), 5.35(1H,d), 4.39(2H,d)
A-75	10.51(1H,brs), 8.94(1H,d), 8.89(1H,s), 7.65(1H,d), 5.05(2H, S), 4.34(2H,s), 1.81(3H,s)
A-79	10.45(1H,brs), 8.96(1H,d), 8.88(1H,s), 8.52(1H,brs), 7.66(1H,d), 5.85(1H,m), 5.67(1H,m), 4.38(2H,d), 1.77(3H,d)
A-81	10.74(1H,brs), 9.37(1H,brs), 8.93(1H,d), 8.89(1H,s), 7.66(1H,d), 4.56(2H,s), 2.60(1H)
A-85	1.33(3H, t), 4.29(2H, q), 4.48(2H, s), 7.64(1H, d), 8.85(1H, s), 8.90(1H, d), 9.60(1H, brs), 11.11(1H, brs)
A-86	4.92(2H, s), 7.3-7.5(5H, m), 7.63(1H, d), 8.8-9.0(2H, m), 9.91(1H, brs), 10.56(1H, brs)
A-88	8.29(1H,d), 8.88(1H,s), 8.86(1H,s), 7.65(1H,d), 7.28(1H,t), 6.93-6.99(3H) 4.93(2H,s), 3.83(3H,s)
A-89	8.88(1H,s), 8.76(1H,d), 8.63(1H,s), 7.55(1H,d), 7.36(2H,d), 6.88(2H,d), 4.99(2H,s), 3.79(3H,s)
A-90	8.97(1H,d), 8.93(1H,s), 8.52(1H,brs), 7.67(1H,d), 7.35(2H,t), 7.11(2H,d), 7.10(1H,t)
A-149	10.32(1H,s), 9.53(1H,s), 8.98-9.01(2H), 7.68(1H,d), 7.44(2H,d), 7.33(2H,t), 7.15(1H,t)

Cpd	¹ H-NMR
A-153	7.0-7.1(1H, m), 7.2-7.3(1H, m), 7.3-7.5(1H, m), 7.68(1H, d), 7.9-8.1(1H, m), 8.9-9.1(2H, m), 9.82(1H, brs), 10.88(1H, brs)
A-154	7.0-7.3(3H, m), 7.51(1H, s), 7.71(1H, d), 8.99(1H, s), 9.03(1H, d), 10.21(1H, brs), 10.46(1H, brs)
A-155	7.2-7.3(2H, m), 7.4-7.5(2H, m), 7.69(1H, d), 8.94(1H, s), 8.97(1H, d), 10.26(1H, brs), 10.42(1H, brs)
A-158	7.3-7.4(2H, m), 7.4-7.5(2H, m), 7.70(1H, d), 8.99(1H, s), 9.02(1H, d), 9.30(1H, brs), 10.33(1H, brs)
A-162	7.2-7.3(1H, m), 7.5-7.6(1H, m), 7.6-7.7(2H, m), 7.93(1H, d), 8.96(1H, d), 8.98(1H, s), 9.68(1H, brs), 10.72(1H, brs)
A-170	3.82(3H, s), 6.8-6.9(2H, m), 7.3-7.5(2H, m), 7.68(1H, d), 8.9-9.0(2H, m), 9.33(1H, brs), 10.17(1H, brs)
A-180	3.99(3H, s), 7.1-7.2(1H, m), 7.4-7.6(1H, m), 7.66(1H, d), 8.0-8.1(1H, m), 8.2-8.3(1H, m), 8.97(1H, d), 9.00(1H, s), 9.39(1H, brs), 12.32(1H, brs)
A-190	10.42(1H,s), 9.11(1H,s), 9.01(1H,d), 7.86(1H,d), 7.60(1H,s), 7.53(1H,d), 7.31(1H,t), 7.11(1H,d), 4.62(2H)
A-194	7.1-7.3(2H, m), 7.4-7.5(2H, m), 7.69(1H, d), 8.9-9.0(2H, m), 9.65(1H, brs), 10.42(1H, brs)
A-200	6.9-7.1(4H, m), 7.3-7.4(2H, m), 7.4-7.5(2H, m), 7.69(1H, d), 8.9-9.0(2H, m), 9.34(1H, brs), 10.30(1H, brs)
A-203	10.38(1H,s), 9.58(1H,s), 8.98-9.01(2H), 7.71(1H,d), 7.59(2H,d), 7.49(2H,d), 7.00-7.08(4H)
A-204	7.2-7.4(2H, m), 7.70(1H, d), 8.1-8.2(1H, m), 8.79(1H, brs), 8.9-9.1(2H, m), 10.92(1H, brs)
A-205	7.0-7.1(1H, m), 7.3-7.4(1H, m), 7.71(1H, d), 7.9-8.0(1H, m), 8.99(1H, s), 9.03(1H, d), 10.08(1H, brs), 11.05(1H, brs)
A-206	7.2-7.3(2H, m), 7.3-7.4(2H, m), 7.65(1H, d), 8.92(1H, d), 8.95(1H, s), 9.36(1H, brs), 9.92(1H, brs)

Cpd	¹ H-NMR
A-207	7.1-7.2(1H, m), 7.3-7.4(1H, m), 7.6-7.7(1H, m), 7.72(1H, d), 8.99(1H, s), 9.03(1H, d), 10.21(1H, brs), 10.50(1H, brs)
A-208	7.1-7.2(1H, m), 7.4-7.5(2H, m), 7.72(1H, d), 8.97(1H, s), 9.03(1H, d), 9.13(1H, brs), 10.45(1H, brs)
A-209	9.07(1H,s), 8.97(1H,d), 8.27(1H,d), 8.00(1H,brs), 7.81(1H,d), 7.74(1H,t), 7.09(1H,t)
A-210	10.44(1H,s), 9.33(1H,brs), 9.02(1H,d), 8.99(1H,s), 8.71(1H,S), 8.40(1H,d), 7.98(1H,d), 7.71(1H,d), 7.32(1H,dd)
A-211	10.57(1H,s), 9.12(1H,s), 9.02(1H,d), 8.48(2H,d), 7.87(1H,d), 7.63(2H,d)
A-212	12.48(1H,brs), 9.63(1H,brs), 8.88(1H,d), 8.81(1H,s), 8.65(2H,d), 7.61(1H,d), 7.07(1H,t)
A-222	7.01(1H, d), 7.48(1H, d), 7.71(1H, d), 8.98(1H, s), 9.01(1H, d), 9.92(1H, brs)
A-223	7.72(1H, d), 8.33(1H, s), 8.87(1H, s), 8.98(1H, s), 9.01(1H, d), 10.18(1H, brs)
A-248	3.8-4.0(2H, m), 7.67(1H, d), 8.6-8.8(1H, m), 8.91(1H, s), 8.96(1H, s), 9.80(1H, brs)
A-250	1.9-2.1(2H, m), 3.3-3.5(2H, m), 3.5-3.7(2H, m), 7.65(1H, d), 8.43(1H, brs), 8.90(1H, s), 8.93(1H, d), 10.35(1H, brs)
A-251	3.39(3H, s), 3.4-3.6(4H, m), 7.65(1H, d), 8.43(1H, brs), 8.90(1H, s), 8.94(1H, d), 9.02(1H, brs)
A-255	0.92(3H, t), 1.3-1.5(2H, m), 1.5-1.7(2H, m), 1.7-1.9(2H, m), 3.2-3.6(6H, m), 7.63(1H, d), 8.45(1H, brs), 8.89(1H, s), 8.91(1H, d), 10.00(1H, brs)
A-256	3.3-3.6(m, 8H), 4.44(1H, t), 7.65(1H, d), 8.40(1H, brs), 8.90(1H, s), 8.93(1H, s), 9.40(1H, brs)
A-260	3.4-3.5(2H, m), 3.7-3.9(2H, m), 7.67(1H, d), 8.58(1H, brs), 8.91(1H, s), 8.95(1H, d), 9.22(1H, brs)
A-261	10.89(1H,s), 8.89-8.93(2H), 8.55(1H,d), 7.66(1H,d), 3.32-3.64(4H), 1.71-

Cpd	¹ H-NMR
	1.76(2H)
A-262	3.78(3H, s), 3.98(2H, d), 7.64(1H, d), 8.7-8.9(1H, m), 8.89(1H, s), 8.92(1H, d), 10.31(1H, brs)
A-265	4.43 (2H, d), 7.84 (1H, d), 8.81(1H, brs), 9.00(1H, d), 9.08(1H, s)
A-267	8.97(1H,d), 8.93(1H,s), 8.60(1H,s), 7.67(1H,d), 1.74(6H,s)
A-268	1.0-1.2(6H, m), 1.61(3H, s), 2.1-2.3(1H, m), 7.66(1H, d), 8.73(1H, brs), 8.94(1H, s), 8.96(1H, d), 10.05(1H, brs)
A-274	1.5-1.7(4H, m), 2.3-2.6(6H, m), 3.2-3.4(2H, m), 7.62(1H, d), 8.5-8.7(1H, m), 8.8-9.0(2H, m), 10.40(1H, brs)
A-292	1.0-1.9(10H, m), 2.88(3H, s), 3.7-4.0(1H, m), 7.55(1H, d), 8.74(1H, s), 8.82(1H, d)
A-296	2.98(3H, s), 4.52(2H, s), 7.2-7.4(5H, m), 7.57(1H, d), 8.52(1H, brs), 8.74(1H, s), 8.34(1H, d)
A-312	3.11(3H, s), 7.73(1H, d), 8.74(1H, s), 8.87(1H, s), 9.39(1H, s), 9.79(1H, brs)
A-313	3.13(3H, s), 3.79(3H, s), 7.57(1H, d), 8.72(1H, s), 8.85(1H, d), 8.90(1H, brs)
A-316	1.32(6H, d), 3.12(3H, s), 4.1-4.3(1H, m), 7.56(1H, d), 8.70(1H, s), 8.78(1H, brs), 8.84(1H, d)
A-317	3.17(3H, s), 4.40(2H, d), 5.3-5.6(2H, m), 5.9-6.1(1H, m), 7.57(1H, d), 8.68(1H,s), 8.84(1H, d)
A-326	1.50(1H, s), 3.09(3H, s), 3.83(3H, s), 5.54(1H, q), 7.58(1H, d), 8.78(1H, s), 8.85(1H, d)
A-329	3.13(3H, s), 4.88(2H, s), 7.3-7.5(5H, m), 7.53(1H, d), 8.43(1H, s), 8.59(1H, brs), 8.82(1H, d)
A-331	3.17(3H, s), 7.81(1H, d), 8.96(1H, d), 9.13(1H, s), 10.22(1H, brs)
A-349	8.84(1H,d), 8.69(1H,s), 7.69(1H,brs), 7.50-7.59(4H), 7.29(2H,d),

Cpd	¹ H-NMR
	3.21(3H,s)
A-353	8.84(1H,d), 8.70(1H,s), 7.55-7.62(2H), 7.24-7.46(3H), 3.16(3H,s)
A-354	8.84(1H,d), 8.70(1H,s), 7.57(1H,d), 7.45-7.48(2H), 7.32(1H), 7.20(1H), 3.21(3H,s)
A-355	8.84(1H,d), 8.69(1H,s), 7.57(1H,s), 7.50(2H,d), 7.24(2H,d), 3.20(3H,s)
A-365	8.84(1H,d), 8.67(1H,s), 7.55-7.58(2H), 7.27-7.39(2H), 7.22(1H,d), 3.13(3H,s), 2.30(3H,s)
A-366	8.82(1H,d), 8.67(1H,s), 7.77(1H,s), 7.56(1H,d), 7.38(1H,t), 7.23(1H,d)7.06-7.10(2H), 3.18(3H,s), 2.41(3H,s)
A-367	8.84(1H,d), 8.68(1H,s), 7.61(1H,s), 7.56(1H,d), 7.30(2H,d), 7.16(2H,d), 3.18(3H,s), 2.42(3H,s)
A-369	8.80(1H,d)8.66(1H,s), 7.91(1H,s), 7.55(1H,d), 7.39(1H,t), 6.93(1H,dd), 6.86(1H,d), 6.79(1H,d), 3.83(3H,s), 3.19(3H,s)
A-373	8.89(1H,d), 8.85(1H,s), 8.29(2H,d), 7.80(1H,d), 7.73(2H,d), 3.41(3H,s)
A-381	8.86(1H,d), 8.73(1H,s), 7.73(1H,d) 7.29(1H,t), 6.83-6.92(3H), 3.19(3H,s)
A-398	13.93(1H,s), 8.84(1H,d), 8.75(1H,s), 8.37(1H,d), 7.83(1H,t), 7.58(1H,d), 7.09-7.16(2H), 3.36(3H,s)
A-431	3.51(2H, t), 3.64(2H, t), 7.59(1H, d), 8.78(1H, s), 8.82(1H, d), 10.38(1H, brs)
A-519	1.11(3H, t), 3.2-3.4(2H, m), 3.4-3.6(2H, m), 3.7-3.9(2H, m), 7.56(1H, d), 8.73(1H, s), 8.80(1H, d)
A-524	0.85(3H, t), 1.4-1.7(2H, m), 3.1-3.3(2H, m), 3.4-3.6(2H, m), 3.7-3.9(2H, m), 4.82(1H, brs), 7.56(1H, d), 8.72(1H, s), 8.78(1H, d), 10.54(1H, brs)
A-529	8.82(1H,d), 8.62(1H,s), 8.73(1H,brs), 7.54(1H,d), 7.25-7.60(5H), 4.40- 4.58(3H), 1.16(6H)
A-540	1.16(6H, d), 4.2-4.5(1H, m), 7.63(1H, d), 8.68(1H, s), 8.82(1H, d), 9.02(1H, brs)

Cpd	¹ H-NMR
A-544	8.84(1H,d), 8.69(1H,s), 7.56(1H,d), 4.10-4.25(2H), 1.34(3H,d), 1.21(3H,d)
A-564	8.82(1H,d), 8.67(1H,s), 7.50-7.57(3H), 7.15-7.26(3H), 4.65(1H,m), 1.03(6H,d)
A-605	1.10(6H, d), 3.3-3.5(2H, m), 3.8-4.0(2H, m), 4.3-4.5(1H, m), 7.54(1H, d), 8.79(1H, s), 8.80(1H, d)
A-626	8.88(1H,d), 8.73(1H,s), 7.60(1H,d), 6.41(1H,brs), 1.17(9H,s)
A-691	8.82(1H,d), 8.65(1H,s), 7.53(1H,d), 3.95(2H,t), 3.58(2H,t), 1.36(9H,s)
A-697	8.82(1H,d), 8.75(1H,brs), 8.71(1H,s), 7.56(1H,s), 5.75(2H,m), 5.19- 5.30(4H), 3.29(4H,d)
A-713	8.97(1H,s), 8.84(1H,d), 8.73(1H,s), 7.57(1H,d), 5.79(1H,m), 5.26(1H,d), 5.24(1H,d), 4.11(2H,d), 3.78(3H,s)
A-736	8.83(1H,d), 8.69(1H,s), 7.45-7.58(5H), 7.24-7.28(2H), 5.78(1H,m), 5.12(1H,d), 5.08(1H,d), 4.17(2H,d),
A-737	8.84(1H,d), 8.71(1H,s), 7.55-7.62(2H), 7.27-7.45(3H), 5.80(1H,m), 5.09(1H,d), 5.06(1H,d), 4.49(1H,dd), 3.81(1H,dd)
A-738	8.84(1H,d), 8.70(1H,s), 7.57(1H,d), 7.43-7.45(2H), 7.24-7.28(1H), 7.16(1H,dd), 5.77(1H,m), 5.14(1H,d), 5.10(1H,d), 4.16(2H,d)
A-744	8.81(1H,d), 8.69(1H,s), 7.68(1H,d), 7.34(1H,t), 6.88-6.95(3H), 5.77(1H,m), 5.05(1H,d), 5.02(1H,d), 4.19(2H,d), 3.80(3H,s)
A-745	8.83(1H,d), 8.68(1H,s), 7.56(1H,d), 7.15(2H,d), 6.98(2H,d), 5.76(1H,m), 5.10(1H,d), 5.06(1H,d), 4.12(2H,d), 3.86(3H,s)
A-747	8.85(1H,d), 8.70-8.72(2H), 7.72(1H,d), 7.28(1H,t), 6.82-6.89(3H), 5.82(1H,m), 5.03-5.14(2H), 4.20(2H,d)
A-748	8.80(1H,d), 8.68(1H,s), 7.84(1H,s), 7.59(1H,d), 7.07(2H,d), 6.89(2H,d), 5.77(1H,m), 5.00-5.30(2H), 4.11(2H,d)
A-798	4.61(2H, s), 7.2-7.4(5H, m), 7.54(1H, d), 8.54(1H, s), 8.62(1H, d), 9.18(1H, brs), 10.38(1H, brs)

Cpd	¹ H-NMR
A-799	8.95(1H,s), 8.86(1H,d), 8.73(1H,s), 7.57(1H,d), 7.24-7.36(5H), 4.65(2H,s), 3.68(3H,s)
A-805	8.80(1H,d), 8.45(1H,s), 7.53(1H,d), 7.23-7.41(10H), 4.75(2H,s), 4.64(2H,s)
A-822	8.86(1H,d), 8.71(1H,s), 7.58(2H), 7.42(3H), 7.24(3H), 7.04-7.11(4H), 4.76(2H,s)
A-861	9.30(1H,s), 8.81(1H,d), 8.73(1H,s), 7.55(1H,d), 4.38(1H,m), 3.83(1H,d), 3.03(1H,t), 1.50-1.75(6H), 1.22(3H,d)
A-862	3.3-3.5(2H, m), 3.6-3.8(2H, m), 4.47(2H, s), 7.1-7.4(5H, m), 7.57(1H, d), 8.73(1H, s), 8.79(1H, d)
A-864	8.79(1H,d), 8.72(1H,s), 7.56(1H,d), 4.45(1H,brs), 3.20-3.80(4H), 1.90- 2.10(2H)
A-865	8.84(1H,d), 8.74(1H,s), 8.42(1H,brs), 7.57(1H,d), 5.87(2H,brd), 4.33(2H,s), 4.18(2H,s)
A-866	11.32(1H,brs), 9.18(1H,s), 9.05(1H,d), 7.97(1H,d), 7.96(1H,d), 7.94(1H,d), 7.47(1H,t), 7.33(1H,t)
A-867	8.86(1H,d), 8.78(1H,s), 7.71(1H,d), 7.25-7.45(10H)
A-869	3.6-3.9(4H, m), 7.2-7.6(6H, m), 8.67(1H, d), 8.79(1H, m)
A-871	1.7-2.2(4H, m), 3.2-3.7(4H, m), 7.56(1H, d), 8.73(1H, s), 8.81(1H, d), 9.11(1H, brs)
A-872	1.5-1.8(6H, m), 3.3-3.6(4H, m), 7.56(1H, d), 8.75(1H, s), 8.83(1H, d), 8.93(brs)
A-873	3.4-3.6(4H, m), 3.6-3.9(4H, m), 7.58(1H, d), 8.03(1H, brs), 8.76(1H, s), 8.86(1H, d)
A-874	2.6-2.8(4H, m), 4.7-4.9(4H, m), 7.59(1H, d), 8.77(1H, s), 8.86(1H, d)
B-37	4.85(2H, d), 7.2-7.5(5H, m), 7.62(1H, d), 8.85(1H, s), 8.92(1H, d), 9.74(1H, brs), 10.61(1H, brs)

Cpd	¹ H-NMR
B-40	10.83(1H,s), 8.95(1H,d), 8.91(1H,s), 8.78(1H,s), 7.65(1H,d), 7.25-7.67(5H), 1.91(6H)
B-47	10.58(1H), 9.14(1H,s), 8.97(1H,d), 8.90(1H,s), 7.67(1H,d), 7.24-7.38(4H), 4.86(2H,d)
B-64	3.84(3H, s), 7.79(1H, s), 8.84(1H, s), 8.93(1H, d), 10.78(1H, brs)
B-65	12.41(1H,s), 10.66(1H,s), 8.93(1H,s), 8.87(1H,d), 7.70(1H,d), 4.07(2H,q), 1.16(3H,t)
B-71	12.14(1H,s), 9.22(1H,s), 8.98(1H,d), 8.92(1H,s), 7.68(1H,d), 1.43(9H,s)
B-74	12.53(1H,s), 10.79(1H,s), 9.00(1H,s), 8.95(1H,d), 7.79(1H,d), 6.02(1H,m), 5.38(1H,d), 5.28(1H,d), 4.60(2H,d)
B-86	12.22(1H,s), 9.22(1H,brs), 8.95(1H,d), 8.86(1H,s), 7.66(1H,d), 7.37-7.44(5H), 5.14(2H,s)
B-100	2.84(1H, brs), 3.36(1H, brs), 7.87(1H, d), 8.28(1H, brs), 9.03(1H, d), 9.17(1H, s)
B-108	5.40(2H, s), 7.2-7.5(5H, m), 7.71(1H, d), 8.9-9.1(2H, m), 12.80(1H, brs)
B-109	6.8-7.1(4H, m), 7.3-7.4(1H, m), 7.65(1H, d), 8.90(1H, s), 8.96(1H, d), 8.49(1H, brs), 11.82(1H, d)
B-149	12.34(1H,s), 10.95(1H,brs), 9.14(1H,s), 9.02(1H,d), 7.86(1H,d), 7.81(2H,d), 7.44(2H,t), 7.29(1H,m)
B-150	12.35(1H,s), 11.15(1H,brs), 9.16(1H,s), 9.03(1H,d), 8.34(1H,t), 7.87(1H,d), 7.25-7.35(3H)
B-151	12.45(1H,s), 9.14(1H,s), 9.02(1H,d), 7.49(1H), 7.47(1H,d), 7.46-7.50(2H), 7.07(1H,m)
B-152	12.25(1H,s), 11.03(1H,brs), 9.12(1H,s), 9.02(1H,d), 7.86(1H,d), 7.78(2H,t), 7.21(2H,t)
B-155	9.09(1H,s), 8.98(1H,d), 7.83(1H,d), 7.78(2H,d), 7.44(2H,d)
B-158	9.13(1H,s), 9.02(1H,d), 7.87(1H,d), 7.79(2H,d), 7.62(2H,d)

Cpd	¹ H-NMR
B-163	7.5-7.6(2H, m), 7.67(1H, d), 7.8-7.9(1H, m), 8.01(1H, d), 8.91(1H, s), 8.95(1H, s), 9.82(1H, brs), 12.25(1H, brs)
B-166	9.00(1H,s), 8.90(1H,d), 7.74(1H,d), 7.52(1H,d), 7.45(1H,s), 7.19(1H,t), 6.99(1H,d), 2.25(3H,s)
B-167	12.29(1H,s), 10.94(1H,brs), 9.13(1H,s), 9.01(1H,d), 7.86(1H,d), 7.66(2H,d), 7.25(2H,d), 2.34(3H,s)
B-168	3.97(3H, s), 6.9-7.3(3H, m), 7.88(1H, d), 8.8-8.9(1H, m), 9.03(1H, d), 9.15(1H, s), 10.95(1H, brs), 12.73(1H, brs)
B-169	3.83(3H, s), 6.8-6.9(1H, m), 7.2-7.4(2H, m), 7.6-7.7(1H, m), 7.86(1H, d), 9.01(1H, d), 9.13(1H, s), 10.97(1H, brs), 12.38(1H, brs)
B-170	3.79(3H, s), 6.95(2H, d), 7.63(2H, d), 7.83(1H, d), 8.98(1H, d), 9.08(1H, s), 10.93(1H, brs), 12.17(1H, brs)
B-176	9.14(1H,s), 9.03(1H,d), 8.12(2H,d), 7.88(1H,d), 7.85(2H,d)
B-184	12.35(1H,s), 10.96(1H,brs), 9.13(1H,s), 9.02(1H,d), 8.58(1H,s), 7.86(1H,d), 7.53(1H,s), 7.25(1H,t), 7.15(1H,t), 6.76(1H,d)
B-185	12.14(1H,s), 10.92(1H,brs), 9.12(1H,s), 9.20(1H,d), 8.54(1H,brs), 7.85(1H,d), 7.56(2H,d), 6.89(2H,d)
B-189	4.71(2H, s), 7.2-7.4(2H, m), 7.5-7.6(1H, m), 7.8-7.9(2H, m), 9.01(1H, d), 9.11(1H, s), 11.01(1H, brs), 12.13(1H, brs)
B-190	12.38(1H,s), 10.98(1H), 9.15(1H,s), 9.03(1H,d), 7.87(1H,d), 7.74(1H,d), 7.73(1H,s), 7.41(1H,t), 7.30(1H,d), 4.69(3H,s)
B-194	12.37(1H,brs), 9.13(1H,s), 9.03(1H,d), 7.92(2H,d), 7.87(1H,d), 7.42(2H,d)
B-209	9.99(1H,s), 9.18(1H,s), 9.04(1H,d), 8.48-8.55(3H), 7.88(1H,d)
B-247	7.5-8.0(6H, m), 8.99(1H, d), 9.01(1H, s), 10.64(1H, brs)
B-251	3.42(3H, s), 3.65(2H, t), 3.8-4.0(2H, m), 7.66(1H, d), 8.89(1H, s), 8.96(1H, d), 9.22(1H, brs), 10.48(1H, brs)
B-255	0.91(3H, t), 1.3-1.5(2H, m), 1.5-1.7(2H, m), 1.9-2.1(2H, m), 3.46(3H, t),

Cpd	¹ H-NMR
	3.56(3H, t), 3.81(2H, q), 7.66(1H, d), 8.89(1H, s), 8.97(1H, d), 9.02(1H, brs), 10.53(1H, brs)
B-257	1.99(3H, s), 7.88(1H, d), 8.97(1H, d), 8.99(1H, s), 10.92(1H, brs), 12.92(1H, brs)
B-258	7.5-7.7(3H, m), 7.86(1H, s), 7.9-8.1(2H, m), 9.02(1H, d), 9.14(1H, brs)
B-259	7.3-7.5(5H, m), 7.5-7.7(5H, m), 7.77(1H, d), 8.8-9.0(2H, m), 13.05(1H, brs)
B-261	1.8-2.0(2H, m), 3.76(2H, t), 3.8-3.9(2H, m), 7.66(1H, m), 8.99(1H, s), 8.95(1H, d), 9.44(1H, brs), 10.53(1H, brs)
B-267	9.08(1H,s), 9.01(1H,d), 7.84(1H,d), 1.95(6H,s)
B-269	10.38(1H,brs), 9.35(1H,s), 8.96(1H,d), 8.90(1H,s), 7.67(1H,d), 3.73(4H), 1.60-1.80(4H)
B-296	3.23(3H, s), 5.22(2H, s), 7.22-7.5(5H, m), 7.63(1H, d), 8.7-9.0(2H, m)
B-313	9.40(1H,s), 8.95(1H,d), 8.75(1H,s), 7.57(1H,d), 3.86(3H,s), 3.58(3H,s)
B-331	3.37(3H, s), 4.70(1H, s), 7.53(1H, d), 8.62(1H, s), 8.80(1H, d)
B-349	3.69(1H, s), 7.3-7.6(6H, m), 8.33(1H, brs), 8.51(1H, s), 8.79(1h, d)
B-353	8.81(1H,d), 8.52(1H,s), 8.52(1H,s), 7.53-7.60(2H), 7.25-7.46(3H), 3.62(3H,s)
B-354	10.13(1H), 8.88(1H,d), 8.48(1H,s), 7.72(1H,d), 7.37-7.55(4H), 3.75(3H,s)
B-355	8.84(1H,d), 8.57(1H,s), 8.15(1H,s), 7.56(1H,d), 7.43(2H,d), 7.27(2H,d), 3.68(3H,s)
B-366	8.81(1H,d), 8.58(1H,s), 8.14(1H,s), 7.54(1H,d), 7.37(1H,d), 7.25(1H), 7.10(2H), 3.65(3H,s), 2.42(3H,s)
B-369	8.47(1H,d), 8.03(1H,s), 7.33(1H,d), 7.02(1H,t), 6.54-6.64(3H), 3.45(3H,s), 3.32(3H,s)
B-373	8.87(1H,d), 8.62(1H,s), 8.35(1H,s), 8.31(2H,d), 7.57(1H,d), 7.53(2H,d), 3.78(3H,s)

Cpd	¹ H-NMR
B-398	8.89(1H,d), 8.72(1H,s), 8.51(1H,d), 7.98(1H,dd), 7.73(1H,d), 7.58(1H,d), 7.31(1H,dd), 3.79(3H,s)
B-417	9.15(1H,s), 8.88(1H,d), 7.69(1H,d), 4.16(3H,s), 3.56(3H,s)
B-431	3.38(3H, s), 3.7-4.2(4H, m), 7.5-7.7(1H, m), 8.7-9.0(2H, m), 10.35(1H, brs)
B-519	1.2-1.4(3H, m), 3.7-4.1(6H, m), 7.56(1H, d), 8.6-9.0(2H, m), 10.85(1H, brs)
B-564	9.08(1H,brs), 8.36(1H,d), 7.51(1H,brs), 7.23(1H,d), 7.04-7.30(3H), 6.86-6.91(2H), 5.17(1H), 0.74(6H,d)
B-713	9.45(1H,s), 8.85(1H,d), 8.76(1H,s), 7.56(1H,d), 5.90(1H,m), 5.27-5.36(2H), 4.70(2H,d), 3.86(3H,s)
B-736	8.85(1H,s) 8.27(1H,s), 7.69(1H,d), 7.30-7.50(5H), 6.10(1H,m), 5.28(1H,d), 5.17(1H,d), 4.89(2H,d)
B-737	8.83(1H,d), 8.12(1H,s), 7.69(1H,d), 7.54-7.65(2H), 7.38-7.45(2H), 6.05(1H,m), 5.24(1H,d), 5.21(1H,d), 5.00(1H,dd), 4.73(1H,dd)
B-738	10.15(1H), 8.86(1H,d), 8.40(1H,s), 7.71(1H,d), 7.35-7.54(4H), 6.00(1H,m), 5.27(1H,d), 5.22(1H,d), 4.93(1H,d)
B-744	8.80(1H,d), 8.59(1H,s), 8.11(1H,s), 7.53(1H,d), 7.41(1H,t), 6.96(1H,dd), 6.84(1H,dd), 6.77(1H), 5.94(1H,m), 5.20(1H,d), 5.17(1H,d), 4.73(2H,d), 3.84(3H,s)
B-745	8.80(1H,d), 8.67(1H,s), 8.13(1H,s), 7.53(1H,d), 7.17(2H,d), 6.98(2H,d), 5.93(1H,m), 5.17(1H,d), 5.14(1H,d), 4.72(2H,d), 3.85(3H,s)
B-747	8.79(1H,d), 8.51(1H,s), 8.34(1H,s), 7.56(1H,d), 7.33(1H,t), 7.26(1H,s), 6.87(1H,dd), 6.79(1H,dd), 6.74(1H,s), 5.91(1H,m), 5.21(1H,d), 5.17(1H,d), 4.73(2H,d)
B-748	9.69(1H,s), 8.80(1H,d), 7.96(1H,s), 7.66(1H,d), 7.19(2H,d), 6.86(2H,d), 5.93(1H,m), 5.12-5.25(2H), 4.89(2H,d)
B-799	10.45(1H,brs), 8.90(1H,d), 8.86(1H,s), 7.76(1H,d), 7.30-7.46(5H),

Cpd	¹ H-NMR
	5.41(2H,s), 3.88(3H,s)
B-805	8.80(1H,d), 8.69(1H,s), 8.45(1H,s), 7.53(1H,d), 7.23-7.41(10H), 4.75(2H,s), 4.64(2H,s)
B-822	9.90(1H), 8.84(1H,d), 8.25(1H,s), 7.70(1H,d), 7.24-7.45(10H), 5.62(2H,s)
B-861	9.96(1H,brs), 8.95(1H,s), 8.93(1H,d), 7.79(1H,d), 5.40(1H,brs), 4.23(1H,brs), 3.34(1H) 1.60-1.94(6H), 1.33(3H,d)
B-863	8.86-8.95(2H), 7.65(1H,d), 5.62(1H), 3.85-4.35(4H), 2.35-2.65(2H)
B-864	8.93-8.98(2H), 7.79(1H,d), 4.75(1H), 3.70-4.00(4H), 1.95-2.25(2H)
B-865	8.93(2H), 8.42(1H,brs), 7.64(1H,d), 5.9(2H,m), 4.64(2H,s), 4.57(2H,s)
B-867	8.81(1H,d), 8.54(1H,s), 8.49(1H,s), 7.54(1H,d), 7.28-7.45(10H)
B-868	10.10(1H,s), 8.90(1H,d), 8.82(1H,s), 7.76(1H,d), 7.30-7.53(5H), 2.04(3H,s)
B-870	10.38(1H,), 9.37(1H,s), 8.96(1H,d), 8.89(1H,s), 7.67(1H,d), 4.30(2H), 3.74(2H), 3.04(3H,s), 1.85-1.90(4H)
B-871	1.9-2.2(4H, m), 3.7-4.0(4H, m), 7.62(1H, d), 8.8-9.0(2H, m)
B-872	1.6-1.9(6H, m), 3.6-3.8(2H, m), 4.0-4.3(2H, m), 7.63(2h, d), 8.87(1H, brs), 8.9-9.0(2H, m)
B-873	3.5-4.5(6H, m), 7.64(1H, d), 8.56(1H, brs), 8.92(1H, s), 8.94(1H, d)
B-874	8.94(1H,d), 8.93(1H,s), 7.65(1H,d), 4.40(2H,brs), 4.02(2H,brs), 2.86(4H)
B-877	3.07(2H, dt), 3.96(2H, t), 7.06(1H, s), 7.74(1H, d), 8.73(1H, s), 8.87(1H, d)
B-880	1.87(6H, d), 7.2-7.8(6H, m), 8.77(1H, s), 8.83(1H, d)
C-10	3.08(3H, s), 4.57(2H, s), 7.2-7.5(5H, m), 7.64(1H, d), 8.72(1H, s), 8.89(1H, d), 9.34(1H, brs)
C-78	3.10(3H, s), 3.26(3H, d), 4.5-4.8(2H, m), 7.1-7.5(5H, m), 7.64(1H, d), 8.72(1H, s), 8.90(1H, d), 9.34(1H, brs)

Cpd	¹ H-NMR
C-85	3.02(3H, s), 3.34(3H, s), 3.64(3H, s), 7.58(1H, d), 8.65(1H, d), 8.81(1H, d)
C-91	2.88(3H,s), 2.98(3H,s), 4.72(2H,s), 7.30-7.43(5H), 7.59(1H,d), 8.52(1H,s), 8.80(1H,d)
D-85	1.33(1H,t), 2.98(3H,s), 3.61(3H,s), 3.87(1H,q), 7.60(1H,d), 8.67(1H,s), 8.82(1H,d)
D-86	1.2-1.4(6H, m), 3.7-4.0(4H, m), 7.59(1H, d), 8.67(1H, d), 8.81(1H, d)
E-85	2.97(3H,s), 3.59(3H,s), 4.42(2H,d), 5.28(1H,d), 5.32(1H,d), 5.98(1H,m), 7.61(1H,d), 8.68(1H,s), 8.83(1H,d)
E-87	3.00(3H, s), 4.25(2H, d), 4.37(2H, d), 5.2-5.5(4H, m), 5.7-6.1(2H, m), 7.61(1H, d), 8.68(1H, s), 8.82(1H, d)
F-85	2.35(1H,t), 3.09(3H,s), 3.68(3H,s), 4.64(2H,d), 7.62(1H,d), 8.68(1H,s), 8.85(1H,d)
F-88	2.37(1H, dd), 2.62(1H, dd), 3.12(3H, s), 4.50(2H, d), 4.61(2H, d), 7.63(1H, d), 8.73(1H, s), 8.86(1H, d)
G-35	4.66(2H,s), 4.75(2H,s), 7.24-7.42(10H), 7.43(1H,d), 8.46(1H,s), 8.83(1H,d)
G-85	2.81(3H,s), 3.08(3H,s), 5.06(2H,s), 7.26-7.32(3H), 7.45(2H,d), 7.59(1H,d), 8.70(1H,s), 8.82(1H,d)
G-91	2.71(3H, s), 4.29(2H, s), 4.71(2H, s), 7.0-7.1(2H, m), 7.2-7.6(8H, m), 7.58(1H, d), 8.56(1H, s), 8.80(1H, d)
G-126	4.31(2H,s), 4.38(2H,s), 4.71(2H,s), 6.89(2H, d), 7.07(2H), 7.17-7.39(11H), 7.50(1H,d), 8.39(1H,s), 8.58(1H,d)
H-85	2.96(3H,s), 3.64(3H,s), 3.81(3H,s), 4.59(2H,s), 7.62(1H,d), 8.80(1H,s), 8.85(1H,d)
H-89	3.08(3H, S), 3.74(3H, s), 3.77(3H, s), 4.48(2H, s), 4.60(2H, s), 7.64(1H, s), 8.84(1H, s), 8.87(1H, d)

Cpd	¹ H-NMR
H-91	2.90(3H,s), 3.69(3H,s), 4.76(2H,s), 7.24-7.45(5H), 7.64(1H,d), 8.80(1H,s), 8.85(1H,d)
I-85	1.60(3H,d), 3.63(3H,s), 3.80(3H,s), 5.30(1H,q), 7.58(1H,d), 8.78(1H,s), 8.84(1H,d)
S-2	0.87(3H, t), 1.4-1.7(2H, m), 3.17(2H, t), 3.54(2H, t), 4.06(2H, t), 7.54(1H, d), 8.65(1H, s), 8.81(1H, d)
S-3	1.15(6H, d), 3.49(2H, t), 3.9-4.2(3H, m), 7.54(1H, d), 8.66(1H, s), 8.81(1H, d)
S-7	1.34(9H,s), 3.58(2H, t), 3.96(2H, t), 7.53(1h, d), 8.65(1h, s), 8.81(1h, d)
S-15	3.40(2H, t), 4.01(2H, t), 4.53(2H, s), 7.1-7.4(5H, m), 7.57(1h, d), 8.69(1H, s), 8.83(1H, d)
S-18	4.00(2H, t), 4.18(2H, t), 7.1-7.5(5H, m), 7.57(1H, d), 8.70(1H, s), 8.83(1H, d)
S-109	1.25(3H, q), 3.1-3.3(1H, d), 3.4-3.6(1H,m), 3.7-4.0(2H, m), 4.28(1H, d), 4.47(1H, d), 5.76(1H, d), 7.1-7.5(5H, m), 7.57(1H, d), 8.70(1H, s), 8.83(1H, d)
S-120	1.37(6H, d), 4.2-4.4(1H, m), 4.42(2H, s), 7.62(1H, d), 8.73(1H, s), 8.91(1H, d)
S-124	1.55(9H, s), 4.34(2H, s), 7.60(1H, d), 8.71(1H, s), 8.90(1H, d)
S-132	4.47(2H, s), 4.62(2H, s), 7.2-7.4(4H, m), 7.61(1H, d), 8.70(1H, s), 8.91(1H, d)
S-143	1.36(6H, d), 1.70(3H, d), 4.3-4.4(1H, m), 4.67(1H, q), 7.60(1H, d), 8.71(1H, s), 8.90(1H, d)
S-155	1.71(3H, d), 4.76(2H, s), 4.76(1H, q), 7.1-7.4(5H, m), 7.61(1H, d), 8.69(1H, s), 8.91(1H, d)
S-167	1.35(6H, d), 1.78(6H, s), 4.2-4.4(1H, m), 7.58(1H, d), 8.67(1H, s), 8.88(1h, d)
S-356	3.77(2H, t), 4.40(2H, t), 6.81(1H, brs), 7.54(1H, d), 8.65(1H, s), 8.82(1H,

Cpd	¹ H-NMR
	d)
S-357	0.94(3H,t), 1.34(1h,m), 1.60(1H,m), 3.63(2H,t), 3.76(2H,t), 4.23(2H,t), 7.51(1H,d), 8.62(1H,s), 8.79(1H,d)
S-548	3.69(2H,t), 3.77(3h,s), 4.00(2H,t), 7.57(1H,d), 8.67(1H,s), 8.86(1H,d)
S-549	3.43(2H,t), 3.88(2H,t), 4.90(2H,s), 7.30-7.40(5H), 7.57(1H,d), 8.67(1H,s), 8.85(1H,d)
S-550	1.40(3H,d), 4.09(1H,m), 4.34(1H,m), 4.64(1H,m), 7.55(1H,,d), 8.78(1H,d), 9.14(1H,s), 9.47(1H,brs)
S-551	1.03(3H,t), 1.76(2H,m), 4.19(2H,m), 4.63(1H,m), 7.56(1H,d), 8.80(1H,d), 9.17(1H,s), 9.49(1H,brs)
S-552	0.88(3H,t), 1.80(2H,m), 3.82(1H,m), 4.17(1H,d), 4.30(1H,dd), 4.63(1H,t), 5.12(1H,d), 7.23-7.38(5H), 7.53(1H,d), 8.75(1H,d), 9.10(1H,s)
S-553	4.38(1H,dd), 4.90(1H,t), 5.27((1H), 7.25-7.53(5H), 7.57(1H,d), 8.81(1H,d), 9.22(1H,s), 9.70(1H,brs)
S-554	2.67(3H,s), 3.90(1H,dd), 4.45(1H,dd), 4.65(1h,dd), 7.30(2H), 7.40-7.450(3H), 7.60(1H,d), 8.73(1H,s), 8.87(1H,d)
S-555	3.73(1H,d), 4.47(1H,t), 4.66(1H,t), 4.89(1H,t), 5.17(1H,d), 7.10-7.46(10H), 7.57(1H,d), 8.79(1H,d), 9.18(1H,s)
S-556	1.56(3H,d), 3.51(1H,dd), 4.02(1h,t), 4.95(1H,m), 7.54(1H,d), 8.78(1H,d), 9.15(1H,s), 9.32(1H,s)
S-557	3.90(1H,t), 4.32(1H,t), 5.80(1H,t), 7.38-7.46(5H), 7.57(1H,d), 8.81(1H,d), 9.21(1H,s), 9.42(1H,brs)
S-558	3.08(3H,s), 3.60(1H,dd), 4.06(1H,t), 5.78(1H,dd), 7.28-7.40(5H), 7.52(1H,d), 8.74(1H,d), 9.09(1H,s)
S-559	3.44(1H,dd), 3.89(1H,t), 4.60(1H,d), 4.73(1H,d), 5.76(1H,dd), 7.26-7.40(10H), 7.53(1H,d), 8.76(1H,d), 9.13(1H,s)
U-3	8.80(1H,d), 8.66(1h,s), 7.54(1H,d), 4.29(2H,t), 4.05(2H,t), 1.18(6H,d)

Cpd	¹ H-NMR
U-7	8.78(1H,d), 8.66(1H,s), 7.52(1H,d), 4.28(2H,t), 4.00(2H,t), 1.34(9H,s)
U-20	8.81(1H,d), 8.67(1H,s), 7.55(1H,d), 7.25-7.50(5H), 4.66(2H,s), 4.00-4.17(4H)
W-194	1.45(18H, s), 7.54(1H, d), 7.75(1H, d), 9.08(1H, s), 10.17(1H, brs)
X-35	3.24(3H, d), 7.67(1H, d), 8.89(1H, s), 8.97(1H, d), 9.24(1H, brs), 10.32(1H, brs)
X-43	4.90(2H, d), 7.2-7.5(5H, m), 7.68(1H, d), 8.92(1H, s), 8.98(1H, d), 9.51(1H, brs), 10.62(1H, brs)
X-45	9.00(1H,s), 8.97(1H,d), 7.82(1H,d), 5.04(2H,q)
X-55	3.77(2H, t), 4.55(2H, t), 7.64(1H, d), 8.84(1H, s), 8.92(1H, d), 9.27(1H, brs)

According to a further feature of the present invention there is provided a method for the control of pests at a locus which comprises the application of an effective amount of a compound of formula (I) or a salt thereof. For this purpose, the said compound is normally used in the form of a pesticidal composition (i.e. in association with compatible diluents or carriers and/or surface active agents suitable for use in pesticidal compositions), for example as hereinafter described.

The term "compound of the invention" as used hereinafter embraces a 3-pyridylcarboxamide of formula (I) as defined above and a pesticidally acceptable salt thereof.

One aspect of the present invention as defined above is a method for the control of pests at a locus. The locus includes, for example, the pest itself, the place (plant, field, forest, orchard, waterway, soil, plant product, or the like) where the pest resides or feeds, or a place susceptible to future infestation by the pest. The compound of the invention may therefore be applied directly to the pest, to the place where the pest resides or feeds, or to the place susceptible to future infestation by the pest.

As is evident from the foregoing pesticidal uses, the present invention provides pesticidally active compounds and methods of use of said compounds for the control of a number of pest species which includes: arthropods, especially insects or mites, or plant nematodes. The compound of the invention may thus be advantageously employed in practical uses, for example, in agricultural or horticultural crops, in forestry, in veterinary medicine or livestock husbandry, or in public health. The compounds of the invention may be used for example in the following applications and on the following pests:

For the control of soil insects, such as corn rootworm, termites (especially for protection of structures), root maggots, wireworms, root weevils, stalkborers, cutworms, root aphids, or grubs. They may also be used to provide activity against plant pathogenic nematodes, such as root-knot, cyst, dagger, lesion, or stem or bulb nematodes, or against mites. For the control of soil pests, for example corn rootworm, the compounds are advantageously applied to or incorporated at an effective rate into the soil in which crops are planted or to be planted or to the seeds or growing plant roots.

In the area of public health, the compounds are especially useful in the control of many insects, especially filth flies or other Dipteran pests, such as houseflies, stableflies, soldierflies, hornflies, deerflies, horseflies, midges, punkies, blackflies, or mosquitoes.

In the protection of stored products, for example cereals, including grain or flour, groundnuts, animal feedstuffs, timber or household goods, e.g. carpets and textiles, compounds of the invention are useful against attack by arthropods, more especially beetles, including weevils, moths or mites, for example *Ephestia* spp. (flour moths), *Anthrenus* spp. (carpet beetles), *Tribolium* spp. (flour beetles), *Sitophilus* spp. (grain weevils) or *Acarus* spp. (mites).

In the control of cockroaches, ants or termites or similar arthropod pests in infested domestic or industrial premises or in the control of mosquito larvae in waterways, wells, reservoirs or other running or standing water.

For the treatment of foundations, structures or soil in the prevention of the attack on building by termites, for example, *Reticulitermes* spp., *Heterotermes* spp., *Coptotermes* spp..

- In agriculture against adults, larvae and eggs of Lepidoptera (butterflies and moths), e.g. *Heliothis* spp. such as *Heliothis virescens* (tobacco budworm), *Heliothis armigera* and *Heliothis zea*. Against adults and larvae of Coleoptera (beetles) e.g. *Anthonomus* spp. e.g. *grandis* (cotton boll weevil), *Leptinotarsa decemlineata* (Colorado potato beetle), *Diabrotica* spp. (corn rootworms). Against Heteroptera (Hemiptera and Homoptera) e.g. *Psylla* spp., *Bemisia* spp., *Trialeurodes* spp., *Aphis* spp., *Myzus* spp., *Megoura viciae*, *Phylloxera* spp., *Nephotettix* spp. (rice leaf hoppers), *Nilaparvata* spp..
- Against Diptera e.g. *Musca* spp.. Against Thysanoptera such as *Thrips tabaci*.
- 10 Against Orthoptera such as *Locusta* and *Schistocerca* spp., (locusts and crickets) e.g. *Gryllus* spp., and *Acheta* spp. for example, *Blatta orientalis*, *Periplaneta americana*, *Blatella germanica*, *Locusta migratoria migratorioides*, and *Schistocerca gregaria*. Against Collembola e.g. *Periplaneta* spp. and *Blatella* spp. (roaches). Against arthropods of agricultural significance such as Acari (mites) e.g. *Acarus siro*,
- 15 *Argas* spp., *Ornithodoros* spp., *Dermanyssus gallinae*, *Eriophyes ribis*, *Phyllocoptruta oleivora*, *Boophilus* spp., *Rhipicephalus* spp., *Amblyomma* spp., *Hyalomma* spp., *Ixodes* spp., *Psoroptes* spp., *Chorioptes* spp., *Sarcoptes* spp., *Tarsonemus* spp., *Bryobia praetiosa*, *Panonychus* spp., *Tetranychus* spp., *Eotetranychus* spp., *Oligonychus* spp., *Eutetranychus* spp.
- 20 From the order of the Isopoda, for example, *Oniscus aselus*, *Armadium vulgare*, *Porcellio scaber*.
- Against nematodes which attack plants or trees of importance to agriculture, forestry or horticulture either directly or by spreading bacterial, viral, mycoplasma or fungal diseases of the plants. The plant-parasitic nematodes which can be controlled in
- 25 accordance with the invention include, for example, the root-parasitic soil-dwelling nematodes such as, for example, those of the genera *Meloidogyne* (root knot nematodes, such as *Meloidogyne incognita*, *Meloidogyne hapla* and *Meloidogyne javanica*), *Heterodera* and *Globodera* (cyst-forming nematodes, such as *Globodera rostochiensis*, *Globodera pallida*, *Heterodera trifolii*) and of the genera *Radopholus*,
- 30 such as *Radopholus similis*, *Pratylenchus* such as *Pratylenchus neglectus*, *Pratylenchus penetrans* and *Pratylenchus curvatus*;

Tylenchulus such as *Tylenchulus semipenetrans*, *Tylenchorhynchus*, such as *Tylenchorhynchus dubius* and *Tylenchorhynchus claytoni*, *Rotylenchus* such as *Rotylenchus robustus*, *Heliocotylenchus* such as *Haliocotylenchus multicinctus*, *Belonoaimus* such as *Belonoaimus longicaudatus*, *Longidorus* such as *Longidorus*
 5 *elongatus*, *Trichodorus* such as *Trichodorus primitivus* and *Xiphinema* such as *Xiphinema index*.

Other nematode genera which can be controlled using the compounds according to the invention are *Ditylenchus* (stem parasites, such as *Ditylenchus dipsaci* and
 10 *Ditylenchus destructor*), *Aphelenchoides* (foliar nematodes, such as *Aphelenchoides ritzemabosi*) and *Anguina* (seed nematodes, such as *Anguina tritici*).

In the field of veterinary medicine or livestock husbandry or in the maintenance of public health against arthropods which are parasitic internally or externally upon vertebrates, particularly warm-blooded vertebrates, for example domestic animals,
 15 e.g. cattle, sheep, goats, equines, swine, poultry, dogs or cats, for example *Acarina*, including ticks (e.g. *Ixodes* spp., *Boophilus* spp. e.g. *Boophilus microplus*, *Rhipicephalus* spp. e.g. *Rhipicephalus appendiculatus* *Ornithodoros* spp. (e.g. *Ornithodoros moubata*) and mites (e.g. *Damalinia* spp.); fleas; *Diptera* (e.g. *Aedes* spp., *Anopheles* spp., *Musca* spp., *Hypoderma* spp.); *Hemiptera*.; *Dictyoptera* (e.g.
 20 *Periplaneta* spp., *Blatella* spp.); *Hymenoptera*; for example against infections of the gastro-intestinal tract caused by parasitic nematode worms, for example members of the family *Trichostrongylidae*.

From the class of the helminths, for example, *Haemonchus*, *Trichostrongylus*, *Ostertagia*, *Cooperia*, *Chabertia*, *Strongyloides*, *Oesophagostomum*, *Hyostrongylus*,
 25 *Ancylostoma*, *Ascaris* and *Heterakis* and also *Fasciola*.

From the class of the *Gastropoda*, for example, *Deroceras* spp., *Arion* spp., *Lymnaea* spp., *Galba* spp., *Succinea* spp., *Biomphalaria* spp., *Bulinus* spp., *Oncomelania* spp.
 30 From the class of the *Bivalva*, for example, *Dreissena* spp.

In practical use for the control of arthropods, especially insects or acarids, or nematode pests of plants, a method, for example, comprises applying to the plants or to the medium in which they grow an effective amount of a compound of the invention. For such a method, the compound of the invention is generally applied to the locus in which the arthropod or nematode infestation is to be controlled at an effective rate in the range of about 2g to about 1kg of the active compound per hectare of locus treated. Under ideal conditions, depending on the pest to be controlled, a lower rate may offer adequate protection. On the other hand, adverse weather conditions, resistance of the pest or other factors may require that the active ingredient be used at higher rates. The optimum rate depends usually upon a number of factors, for example, the type of pest being controlled, the type or the growth stage of the infested plant, the row spacing or also the method of application. Preferably an effective rate range of the active compound is from about 10g/ha to about 400g/ha, more preferably from about 50g/ha to about 200 g/ha.

When a pest is soil-borne, the active compound generally in a formulated composition, is distributed evenly over the area to be treated (ie, for example broadcast or band treatment) in any convenient manner and is applied at rates from about 10g/ha to about 400g ai/ha, preferably from about 50g/ha to about 200 g ai/ha. When applied as a root dip to seedlings or drip irrigation to plants the liquid solution or suspension contains from about 0.075 to about 1000 mg ai/l, preferably from about 25 to about 200 mg ai/l. Application may be made, if desired, to the field or crop-growing area generally or in close proximity to the seed or plant to be protected from attack. The compound of the invention can be washed into the soil by spraying with water over the area or can be left to the natural action of rainfall. During or after application, the formulated compound can, if desired, be distributed mechanically in the soil, for example by ploughing, disking, or use of drag chains. Application can be prior to planting, at planting, after planting but before sprouting has taken place, or after sprouting.

The compound of the invention and methods of control of pests therewith are of particular value in the protection of field, forage, plantation, glasshouse, orchard or vineyard crops, of ornamentals, or of plantation or forest trees, for example: cereals (such as wheat or rice), cotton, vegetables (such as peppers), field crops (such as

sugar beets, soybeans or oil seed rape), grassland or forage crops (such as maize or sorghum), orchards or groves (such as of stone or pit fruit or citrus), ornamental plants, flowers or vegetables or shrubs under glass or in gardens or parks, or forest trees (both deciduous and evergreen) in forests, plantations or nurseries.

- 5 They are also valuable in the protection of timber (standing, felled, converted, stored or structural) from attack, for example, by sawflies or beetles or termites.

They have applications in the protection of stored products such as grains, fruits, nuts, spices or tobacco, whether whole, milled or compounded into products, from moth, beetle, mite or grain weevil attack. Also protected are stored animal products
10 such as skins, hair, wool or feathers in natural or converted form (e.g. as carpets or textiles) from moth or beetle attack as well as stored meat, fish or grains from beetle, mite or fly attack.

Additionally, the compound of the invention and methods of use thereof are of particular value in the control of arthropods or helminths which are injurious to, or
15 spread or act as vectors of diseases domestic animals, for example those hereinbefore mentioned, and more especially in the control of ticks, mites, lice, fleas, midges, or biting, nuisance or myiasis flies. The compounds of the invention are particularly useful in controlling arthropods or helminths which are present inside domestic host animals or which feed in or on the skin or suck the blood of the
20 animal, for which purpose they may be administered orally, parenterally, percutaneously or topically.

The compositions hereinafter described for application to growing crops or crop growing loci or as a seed dressing may, in general, alternatively be employed in the protection of stored products, household goods, property or areas of the general
25 environment. Suitable means of applying the compounds of the invention include: to growing crops as foliar sprays (for example as an in-furrow spray), dusts, granules, fogs or foams or also as suspensions of finely divided or encapsulated compositions as soil or root treatments by liquid drenches, dusts, granules, smokes or foams; to seeds of crops via application as seed dressings by liquid slurries or
30 dusts;

to animals infested by or exposed to infestation by arthropods or helminths, by parenteral, oral or topical application of compositions in which the active ingredient

exhibits an immediate and/or prolonged action over a period of time against the arthropods or helminths, for example by incorporation in feed or suitable orally-ingestible pharmaceutical formulations, edible baits, salt licks, dietary supplements, pour-on formulations, sprays, baths, dips, showers, jets, dusts, greases, shampoos, 5 creams, wax smears or livestock self-treatment systems;

to the environment in general or to specific locations where pests may lurk, including stored products, timber, household goods, or domestic or industrial premises, as sprays, fogs, dusts, smokes, wax-smears, lacquers, granules or baits, or in tricklefeeds to waterways, wells, reservoirs or other running or standing water.

10

The compounds of the formula (I) can also be employed for controlling harmful organisms in crops of known genetically engineered plants or genetically engineered plants yet to be developed. As a rule, the transgenic plants are distinguished by especially advantageous properties, for example by resistances to particular crop protection agents, resistances to plant diseases or pathogens of plant diseases, 15 such as particular insects or microorganisms such as fungi, bacteria or viruses.

Other particular properties concern, for example, the harvested material with regard to quantity, quality, storage properties, composition and specific constituents. Thus, transgenic plants are known where the starch content is increased, or the starch 20 quality is altered, or where the harvested material has a different fatty acid composition.

The use in economically important transgenic crops of useful plants and ornamentals is preferred, for example of cereals such as wheat, barley, rye, oats, millet, rice, 25 cassava and maize or else crops of sugar beet, cotton, soya, oilseed rape, potatoes, tomatoes, peas and other types of vegetables.

When used in transgenic crops, in particular those which have resistances to insects, effects are frequently observed, in addition to the effects against harmful organisms 30 to be observed in other crops, which are specific for application in the transgenic crop in question, for example an altered or specifically widened spectrum of pests

which can be controlled, or altered application rates which may be employed for application.

The invention therefore also relates to the use of compounds of the formula (I) for
5 controlling harmful organisms in transgenic crop plants.

According to a further feature of the present invention there is provided a pesticidal composition comprising one or more compounds of the invention as defined above, in association with, and preferably homogeneously dispersed in one or more
10 compatible pesticidally acceptable diluents or carriers and/or surface active agents [i.e. diluents or carriers and/or surface active agents of the type generally accepted in the art as being suitable for use in pesticidal compositions and which are compatible with compounds of the invention].

In practice, the compounds of the invention most frequently form parts of
15 compositions. These compositions can be employed to control arthropods, especially insects and acarids, or helminths such as plant nematodes. The compositions may be of any type known in the art suitable for application to the desired pest in any premises or indoor or outdoor area. These compositions contain at least one compound of the invention as the active ingredient in combination or
20 association with one or more other compatible components which are for example, solid or liquid carriers or diluents, adjuvants, surface-active-agents, or the like appropriate for the intended use and which are agronomically or medicinally acceptable. These compositions, which may be prepared by any manner known in the art, likewise form a part of this invention.

25 The compounds of the invention, in their commercially available formulations and in the use forms prepared from these formulations may be present in mixtures with other active substances such as insecticides, attractants, sterilants, acaricides, nematocides, fungicides, growth regulatory substances or herbicides.

30 The pesticides include, for example, phosphoric esters, carbamates, carboxylic esters, formamidines, tin compounds and materials produced by microorganisms.

Preferred components in mixtures are:

1. from the group of the phosphorus compounds
 acephate, azamethiphos, azinphos-ethyl, azinphos-methyl, bromophos, bromophos-ethyl, cadusafos (F-67825), chlorethoxyphos, chlorfenvinphos, chlormephos, chlorpyrifos, chlorpyrifos-methyl, demeton, demeton-S-methyl, demeton-S-methyl sulfone, dialifos, diazinon, dichlorvos, dicrotophos, dimethoate, disulfoton, EPN, ethion, ethoprophos, etrimfos, famphur, fenamiphos, fenitriothion, fensulfothion, fenthion, flupyrazofos, fonofos, formothion, fosthiazate, heptenophos, isazophos, isothioate, isoxathion, malathion, methacrifos, methamidophos, methidathion, salithion, mevinphos, monocrotophos, naled, omethoate, oxydemeton-methyl, parathion, parathion-methyl, phenthoate, phorate, phosalone, phosfolan, phosphocarb (BAS-301), phosmet, phosphamidon, phoxim, pirimiphos, pirimiphos-ethyl, pirimiphos-methyl, profenofos, propaphos, proetamphos, prothiofos, pyraclofos, pyridapenthion, quinalphos, sulprofos, temephos, terbufos, tebupirimfos, tetrachlorvinphos, thiometon, triazophos, trichlorphon, vamidothion;
2. from the group of the carbamates
 alanycarb (OK-135), aldicarb, 2-sec-butylphenyl methylcarbamate (BPMC), carbaryl, carbofuran, carbosulfan, cloethocarb, benfuracarb, ethiofencarb, furathiocarb, HCN-801, isoprocarb, methomyl, 5-methyl-m-cumenylbutyryl (methyl)carbamate, oxamyl, pirimicarb, propoxur, thiodicarb, thiofanox, 1-methylthio(ethylideneamino)-N-methyl-N-(morpholinothio)carbamate (UC 51717), triazamate;
3. from the group of the carboxylic esters
 acrinathrin, allethrin, alphametrin, 5-benzyl-3-furylmethyl (E)- (1R)-cis-2,2-dimethyl-3-(2-oxothiolan-3-ylidenemethyl)cyclopropanecarboxylate, beta-cyfluthrin, alpha-cypermethrin, beta-cypermethrin, bioallethrin, bioallethrin ((S)-cyclopentylisomer), bioresmethrin, bifenthrin, (RS)-1-cyano-1-(6-phenoxy-2-pyridyl)methyl (1RS)-trans-3-(4-tert-butylphenyl)-2,2-dimethylcyclopropanecarboxylate (NCI 85193), cycloprothrin, cyfluthrin, cyhalothrin, cythithrin, cypermethrin, cyphenothrin, deltamethrin, emperthrin, esfenvalerate, fenfluthrin, fenpropathrin, fenvalerate, flucythrinate,

flumethrin, fluvalinate (D isomer), imiprothrin (S-41311), lambda-cyhalothrin, permethrin, phenothrin (@ isomer), prallethrin, pyrethrins (natural products), resmethrin, tefluthrin, tetramethrin, theta-cypermethrin, tralomethrin, transfluthrin, zeta-cypermethrin (F-56701);

5

4. from the group of the amidines
amitraz, chlordimeform;

5. from the group of the tin compounds
10 cyhexatin, fenbutatin oxide;

6. others
abamectin, ABG-9008, acetamiprid, acequinocyl, Anagrapha falcitera, AKD-1022, AKD-3059, ANS-118, azadirachtin, Bacillus thuringiensis, Beauveria bassiana,
15 bensultap, bifenazate, binapacryl, BJL-932, bromopropylate, BTG-504, BTG-505, buprofezin, camphechlor, cartap, chlorobenzilate, chlorfenapyr, chlorfluazuron, 2-(4-chlorophenyl)-4,5-diphenylthiophene (UBI-T 930), chlorfentezine, chlorproxyfen, chromafenozide, clothianidine, 2-naphthylmethyl cyclopropanecarboxylate (Ro12-0470), cyromazin, diaclofen (thiamethoxam), diafenthiuron, DBI-3204, ethyl 2-chloro-N-(3,5-dichloro-4-(1,1,2,3,3,3-hexafluoro-1-propyloxy)phenyl)carbamoyl)-2-carboximidate, DDT, dicofol, diflubenzuron, N-(2,3-dihydro-3-methyl-1,3-thiazol-2-ylidene)-2,4-xylidine, dihydroxymethyldihydroxypyrrolidine, dinobuton, dinocap, diofenolan, emamectin benzoate, endosulfan, ethiprole (sulfethiprole), ethofenprox, etoxazole, fenazaquin, fenoxycarb, fipronil, fluazuron, flumite (flufenzine, SZI-121),
25 2-fluoro-5-(4-(4-ethoxyphenyl)-4-methyl-1-pentyl)diphenyl ether (MTI 800), granulosin and nuclear polyhedrosis viruses, fenpyroximate, fenithiocarb, fluacrypyrim, flubenzimine, flubrocyclohexuron, flufenoxuron, flufenzine, flufenprox, fluproxyfen, gamma-HCH, halfenozide, halofenprox, hexaflumuron (DE_473), hexythiazox, HOI-9004, hydramethylnon (AC 217300), IKI-220,
30 indoxacarb, ivermectin, L-14165, imidacloprid, indoxacarb (DPX-MP062), kanemite (AKD-2023), lufenuron, M-020, M-020, methoxyfenozide, milbemectin, NC-196, neemgard, nidinoterfuran, nitenpyram, 2-nitromethyl-4,5-dihydro-6H-thiazine (DS

52618), 2-nitromethyl-3,4-dihydrothiazole (SD 35651), 2-nitromethylene-1,2-thiazinan-3-ylcarbamaldehyde (WL 108477), novaluron, piridaryl, propargite, protrifenbute, pymethroline, pyridaben, pyrimidifen, pyriproxyfen, NC-196, NC-1111, NNI-9768, novaluron (MCW-275), OK-9701, OK-9601, OK-9602, OK-9802, R-195, 5 RH-0345, RH-2485, RYI-210, S-1283, S-1833, SI-8601, silafluofen, silomadine (CG-177), spinosad, spiroticlofen, SU-9118, tebufenozide, tebufenpyrad, teflubenzuron, tetradifon, tetrasul, thiacloprid, thiocyclam, thiamethoxam, tolfenpyrad, triazamate, triethoxyspinosyn A, triflumuron, verbutin, vertalec (mykotal), YI-5301.

- 10 The abovementioned components for combinations are known active substances, many of which are described in Ch.R Worthing, S.B. Walker, The Pesticide Manual, 12th Edition, British Crop Protection Council, Farnham 2000.

15 The effective use doses of the compounds employed in the invention can vary within wide limits, particularly depending on the nature of the pest to be eliminated or degree of infestation, for example, of crops with these pests. In general, the compositions according to the invention usually contain about 0.05 to about 95% (by weight) of one or more active ingredients according to the invention, about 1 to about 95% of one or more solid or liquid carriers and, optionally, about 0.1 to about 50% of 20 one or more other compatible components, such as surface-active agents or the like. In the present account, the term "carrier" denotes an organic or inorganic ingredient, natural or synthetic, with which the active ingredient is combined to facilitate its application, for example, to the plant, to seeds or to the soil. This carrier is therefore generally inert and it must be acceptable (for example, agronomically acceptable, 25 particularly to the treated plant).

The carrier may be a solid, for example, clays, natural or synthetic silicates, silica, resins, waxes, solid fertilizers (for example ammonium salts), ground natural minerals, such as kaolins, clays, talc, chalk, quartz, attapulgit, montmorillonite, bentonite or diatomaceous earth, or ground synthetic minerals, such as silica, 30 alumina, or silicates especially aluminium or magnesium silicates. As solid carriers for granules the following are suitable: crushed or fractionated natural rocks such as calcite, marble, pumice, sepiolite and dolomite; synthetic granules of inorganic or

organic meals; granules of organic material such as sawdust, coconut shells, corn cobs, corn husks or tobacco stalks; kieselguhr, tricalcium phosphate, powdered cork, or absorbent carbon black; water soluble polymers, resins, waxes; or solid fertilizers. Such solid compositions may, if desired, contain one or more compatible wetting, dispersing, emulsifying or colouring agents which, when solid, may also serve as a diluent.

The carrier may also be liquid, for example: water; alcohols, particularly butanol or glycol, as well as their ethers or esters, particularly methylglycol acetate; ketones, particularly acetone, cyclohexanone, methylethyl ketone, methylisobutylketone, or isophorone; petroleum fractions such as paraffinic or aromatic hydrocarbons, particularly xylenes or alkyl naphthalenes; mineral or vegetable oils; aliphatic chlorinated hydrocarbons, particularly trichloroethane or methylene chloride; aromatic chlorinated hydrocarbons, particularly chlorobenzenes; water-soluble or strongly polar solvents such as dimethylformamide, dimethyl sulphoxide, or N-methylpyrrolidone; liquefied gases; or the like or a mixture thereof.

The surface-active agent may be an emulsifying agent, dispersing agent or wetting agent of the ionic or non-ionic type or a mixture of such surface-active agents. Amongst these are e.g., salts of polyacrylic acids, salts of lignosulphonic acids, salts of phenolsulphonic or naphthalenesulphonic acids, polycondensates of ethylene oxide with fatty alcohols or fatty acids or fatty esters or fatty amines, substituted phenols (particularly alkylphenols or arylphenols), salts of sulphosuccinic acid esters, taurine derivatives (particularly alkyltaurates), phosphoric esters of alcohols or of polycondensates of ethylene oxide with phenols, esters of fatty acids with polyols, or sulphate, sulphonate or phosphate functional derivatives of the above compounds.

The presence of at least one surface-active agent is generally essential when the active ingredient and/or the inert carrier are only slightly water soluble or are not water soluble and the carrier agent of the composition for application is water. Compositions of the invention may further contain other additives such as adhesives or colorants. Adhesives such as carboxymethylcellulose or natural or synthetic polymers in the form of powders, granules or lattices, such as arabic gum, polyvinyl alcohol or polyvinyl acetate, natural phospholipids, such as cephalins or lecithins, or synthetic phospholipids can be used in the formulations. It is possible to use

colorants such as inorganic pigments, for example: iron oxides, titanium oxides or Prussian Blue; organic dyestuffs, such as alizarin dyestuffs, azo dyestuffs or metal phthalocyanine dyestuffs; or trace nutrients such as salts of iron, manganese, boron, copper, cobalt, molybdenum or zinc.

- 5 For their agricultural application, the compounds of the invention are therefore generally in the form of compositions, which are in various solid or liquid forms. Solid forms of compositions which can be used are dusting powders (with a content of the compound of the invention, ranging up to 80%), wettable powders or granules (including water dispersible granules), particularly those obtained by extrusion,
- 10 compacting, impregnation of a granular carrier, or granulation starting from a powder (the content of the compound of the invention, in these wettable powders or granules being between about 0.5 and about 80%). Solid homogenous or heterogenous compositions containing one or more compounds of the invention, for example granules, pellets, briquettes or capsules, may be used to treat standing or running
- 15 water over a period of time. A similar effect may be achieved using trickle or intermittent feeds of water dispersible concentrates as described herein. Liquid compositions, for example, include aqueous or non-aqueous solutions or suspensions (such as emulsifiable concentrates, emulsions, flowables, dispersions, or solutions) or aerosols. Liquid compositions also include, in particular, emulsifiable
- 20 concentrates, dispersions, emulsions, flowables, aerosols, wettable powders (or powder for spraying), dry flowables or pastes as forms of compositions which are liquid or intended to form liquid compositions when applied, for example as aqueous sprays (including low and ultra-low volume) or as fogs or aerosols. Liquid compositions, for example, in the form of emulsifiable or soluble concentrates
- 25 most frequently comprise about 5 to about 80% by weight of the active ingredient, while the emulsions or solutions which are ready for application contain, in their case, about 0.01 to about 20% of the active ingredient. Besides the solvent, the emulsifiable or soluble concentrates may contain, when required, about 2 to about 50% of suitable additives, such as stabilizers, surface-active agents, penetrating
- 30 agents, corrosion inhibitors, colorants or adhesives. Emulsions of any required concentration, which are particularly suitable for application, for example, to plants, may be obtained from these concentrates by dilution with water. These

compositions are included within the scope of the compositions which may be employed in the present invention. The emulsions may be in the form of water-in-oil or oil-in-water type and they may have a thick consistency.

The liquid compositions of this invention may, in addition to normal agricultural use
5 applications be used for example to treat substrates or sites infested or liable to infestation by arthropods (or other pests controlled by compounds of this invention) including premises, outdoor or indoor storage or processing areas, containers or equipment or standing or running water.

All these aqueous dispersions or emulsions or spraying mixtures can be applied, for
10 example, to crops by any suitable means, chiefly by spraying, at rates which are generally of the order of about 100 to about 1,200 liters of spraying mixture per hectare, but may be higher or lower (eg. low or ultra-low volume) depending upon the need or application technique. The compound or compositions according to the invention are conveniently applied to vegetation and in particular to roots or leaves
15 having pests to be eliminated. Another method of application of the compounds or compositions according to the invention is by chemigation, that is to say, the addition of a formulation containing the active ingredient to irrigation water. This irrigation may be sprinkler irrigation for foliar pesticides or it can be ground irrigation or underground irrigation for soil or for systemic pesticides.

20 The concentrated suspensions, which can be applied by spraying, are prepared so as to produce a stable fluid product which does not settle (fine grinding) and usually contain from about 10 to about 75% by weight of active ingredient, from about 0.5 to about 30% of surface-active agents, from about 0.1 to about 10% of thixotropic agents, from about 0 to about 30% of suitable additives, such as anti-foaming
25 agents, corrosion inhibitors, stabilizers, penetrating agents, adhesives and, as the carrier, water or an organic liquid in which the active ingredient is poorly soluble or insoluble. Some organic solids or inorganic salts may be dissolved in the carrier to help prevent settling or as antifreezes for water.

The wettable powers (or powder for spraying) are usually prepared so that they
30 contain from about 10 to about 80% by weight of active ingredient, from about 20 to about 90% of a solid carrier, from about 0 to about 5% of a wetting agent, from about 3 to about 10% of a dispersing agent and, when necessary, from about 0 to about

80% of one or more stabilizers and/or other additives, such as penetrating agents, adhesives, anti-caking agents, colorants, or the like. To obtain these wettable powders, the active ingredient is thoroughly mixed in a suitable blender with additional substances which may be impregnated on the porous filler and is ground using a mill or other suitable grinder. This produces wettable powders, the wettability and the suspendability of which are advantageous. They may be suspended in water to give any desired concentration and this suspension can be employed very advantageously in particular for application to plant foliage.

The "water dispersible granules (WG)" (granules which are readily dispersible in water) have compositions which are substantially close to that of the wettable powders. They may be prepared by granulation of formulations described for the wettable powders, either by a wet route (contacting finely divided active ingredient with the inert filler and a little water, e.g. 1 to 20% by weight, or with an aqueous solution of a dispersing agent or binder, followed by drying and screening), or by a dry route (compacting followed by grinding and screening).

The rates and concentrations of the formulated compositions may vary according to the method of application or the nature of the compositions or use thereof. Generally speaking, the compositions for application to control arthropod or helminth pests usually contain from about 0.00001% to about 95%, more particularly from about 0.0005% to about 50% by weight of one or more compounds of the invention, or of total active ingredients (that is to say the compounds of the invention, together with other substances toxic to arthropods or helminths, synergists, trace elements or stabilizers). The actual compositions employed and their rate of application will be selected to achieve the desired effect(s) by the farmer, livestock producer, medical or veterinary practitioner, pest control operator or other person skilled in the art.

Solid or liquid compositions for application topically to animals, timber, stored products or household goods usually contain from about 0.00005% to about 90%, more particularly from about 0.001% to about 10%, by weight of one or more compounds of the invention. For administration to animals orally or parenterally, including percutaneously solid or liquid compositions, these normally contain from about 0.1% to about 90% by weight of one or more compounds of the invention. Medicated feedstuffs normally contain from about 0.001% to about 3% by weight of

- one or more compounds of the invention. Concentrates or supplements for mixing with feedstuffs normally contain from about 5% to about 90%, preferably from about 5% to about 50%, by weight of one or more compounds of the invention. Mineral salt licks normally contain from about 0.1% to about 10% by weight of one or more compounds of formula (I) or pesticidally acceptable salts thereof.
- Dusts or liquid compositions for application to livestock, goods, premises or outdoor areas may contain from about 0.0001% to about 15%, more especially from about 0.005% to about 2.0%, by weight, of one or more compounds of the invention. Suitable concentrations in treated waters are between about 0.0001 ppm and about 20 ppm, more particularly about 0.001 ppm to about 5.0 ppm. of one or more compounds of the invention, and may be used therapeutically in fish farming with appropriate exposure times. Edible baits may contain from about 0.01% to about 5%, preferably from about 0.01% to about 1.0%, by weight, of one or more compounds of the invention.
- When administered to vertebrates parenterally, orally or by percutaneous or other means, the dosage of compounds of the invention, will depend upon the species, age, or health of the vertebrate and upon the nature and degree of its actual or potential infestation by arthropod or helminth pests. A single dose of about 0.1 to about 100 mg, preferably about 2.0 to about 20.0 mg, per kg body weight of the animal or doses of about 0.01 to about 20.0 mg, preferably about 0.1 to about 5.0 mg, per kg body weight of the animal per day, for sustained medication, are generally suitable by oral or parenteral administration. By use of sustained release formulations or devices, the daily doses required over a period of months may be combined and administered to animals on a single occasion.
- The following composition EXAMPLES 2A - 2M illustrate compositions for use against arthropods, especially insects or acarids, or helminths such as plant nematodes, which comprise, as active ingredient, compounds of the invention, such as those described in preparative examples. The compositions described in EXAMPLES 2A - 2M can each be diluted to give a sprayable composition at concentrations suitable for use in the field. Generic chemical descriptions of the ingredients (for which all of the following percentages are in weight percent), used in the composition EXAMPLES 2A - 2M exemplified below, are as follows:

	Trade Name	Chemical Description
	Ethylan BCP	Nonylphenol ethylene oxide condensate
	Soprophor BSU	Tristyrylphenol ethylene oxide condensate
	Arylan CA	A 70% w/v solution of calcium dodecylbenzenesulfonate
5	Solvesso 150	Light C ₁₀ aromatic solvent
	Arylan S	Sodium dodecylbenzenesulfonate
	Darvan NO ₂	Sodium lignosulphonate
	Celite PF	Synthetic magnesium silicate carrier
	Sopropon T36	Sodium salts of polycarboxylic acids
10	Rhodigel 23	Polysaccharide xanthan gum
	Bentone 38	Organic derivative of magnesium montmorillonite
	Aerosil	Microfine silicon dioxide

EXAMPLE 2A

- 15 A water soluble concentrate is prepared with the composition as follows:

Active ingredient	7%
Ethylan BCP	10%
N-methylpyrrolidone	83%

To a solution of Ethylan BCP dissolved in a portion of N-methylpyrrolidone is added the active ingredient with heating and stirring until dissolved. The resulting solution is made up to volume with the remainder of the solvent.

20 EXAMPLE 2B

An emulsifiable concentrate (EC) is prepared with the composition as follows:

	Active ingredient	25%(max)
	Soprophor BSU	10%
	Arylan CA	5%
25	N-methylpyrrolidone	50%
	Solvesso 150	10%

The first three components are dissolved in N-methylpyrrolidone and to this is then added the Solvesso 150 to give the final volume.

EXAMPLE 2C

A wettable powder (WP) is prepared with the composition as follows:

Active ingredient	40%
Arylan S	2%
Darvan NO ₂	5%
Celite PF	53%

The ingredients are mixed and ground in a hammer-mill to a powder with a particle size of less than 50 microns.

5

EXAMPLE 2D

An aqueous-flowable formulation is prepared with the composition as follows:

Active ingredient	40.00%
Ethylan BCP	1.00%
Sopropon T360.	0.20%
Ethylene glycol	5.00%
Rhodigel 230.	0.15%
Water	53.65%

The ingredients are intimately mixed and are ground in a bead mill until a mean particle size of less than 3 microns is obtained.

10

EXAMPLE 2E

An emulsifiable suspension concentrate is prepared with the composition as follows:

Active ingredient	30.0%
Ethylan BCP	10.0%
Bentone 38	0.5%
Solvesso 150	59.5%

The ingredients are intimately mixed and ground in a beadmill until a mean particle size of less than 3 microns is obtained.

15

EXAMPLE 2F

A water dispersible granule is prepared with the composition as follows:

126

Active ingredient	30%
Darvan No 2	15%
Arylan S	8%
Celite PF	47%

The ingredients are mixed, micronized in a fluid-energy mill and then granulated in a rotating pelletizer by spraying with water (up to 10%). The resulting granules are dried in a fluid-bed drier to remove excess water.

5 EXAMPLE 2G

A dusting powder is prepared with the composition as follows:

Active ingredient	1 to 10%
Talc powder-superfine	99 to 90%

The ingredients are intimately mixed and further ground as necessary to achieve a fine powder. This powder may be applied to a locus of arthropod infestation, for example refuse dumps, stored products or household goods or animals infested by,

- 10 or at risk of infestation by, arthropods to control the arthropods by oral ingestion. Suitable means for distributing the dusting powder to the locus of arthropod infestation include mechanical blowers, handshakers or livestock self treatment devices.

15 EXAMPLE 2H

An edible bait is prepared with the composition as follows:

Active ingredient	0.1 to 1.0%
Wheat flour	80%
Molasses	19.9 to 19%

The ingredients are intimately mixed and formed as required into a bait form. This edible bait may be distributed at a locus, for example domestic or industrial premises, e.g. kitchens, hospitals or stores, or outdoor areas, infested by arthropods,

- 20 for example ants, locusts, cockroaches or flies, to control the arthropods by oral ingestion.

EXAMPLE 2I

A solution formulation is prepared with a composition as follows:

Active ingredient	15%
Dimethyl sulfoxide	85%

- 5 The active ingredient is dissolved in dimethyl sulfoxide with mixing and or heating as required. This solution may be applied percutaneously as a pour-on application to domestic animals infested by arthropods or, after sterilization by filtration through a polytetrafluoroethylene membrane (0.22 micrometer pore size), by parenteral injection, at a rate of application of from 1.2 to 12 ml of solution per 100 kg of animal body weight.

10 EXAMPLE 2J

A wettable powder is prepared with the composition as follows:

Active ingredient	50%
Ethylan BCP	5%
Aerosil	5%
Celite PF	40%

- 15 The Ethylan BCP is absorbed onto the Aerosil which is then mixed with the other ingredients and ground in a hammer-mill to give a wettable powder, which may be diluted with water to a concentration of from 0.001% to 2% by weight of the active compound and applied to a locus of infestation by arthropods, for example, dipterous larvae or plant nematodes, by spraying, or to domestic animals infested by, or at risk of infection by arthropods, by spraying or dipping, or by oral administration in drinking water, to control the arthropods.

20 EXAMPLE 2K

A slow release bolus composition is formed from granules containing the following components in varying percentages(similar to those described for the previous compositions) depending upon need:

Active ingredient
 Density agent
 Slow-release agent
 Binder

The intimately mixed ingredients are formed into granules which are compressed into a bolus with a specific gravity of 2 or more. This can be administered orally to ruminant domestic animals for retention within the reticulo-rumen to give a continual slow release of active compound over an extended period of time to control

- 5 infestation of the ruminant domestic animals by arthropods.

EXAMPLE 2L

A slow release composition in the form of granules, pellets, brickettes or the like can be prepared with compositions as follows:

Active ingredient 0.5 to 25%
 Polyvinyl chloride 75 to 99.5%
 Dioctyl phthalate (plasticizer)

- 10 The components are blended and then formed into suitable shapes by melt-extrusion or molding. These composition are useful, for example, for addition to standing water or for fabrication into collars or eartags for attachment to domestic animals to control pests by slow release.

15 EXAMPLE 2M

A water dispersible granule is prepared with the composition as follows:

Active ingredient	85%(max)
Polyvinylpyrrolidone	5%
Attapulgate clay	6%
Sodium lauryl sulfate	2%
Glycerine	2%

The ingredients are mixed as a 45% slurry with water and wet milled to a particle size of 4 microns, then spray-dried to remove water.

METHODS OF PESTICIDAL USE

The following representative test procedures, using compounds of the invention, were conducted to determine the parasitocidal and pesticidal activity of compounds of the invention.

5

METHOD A:

Germinated field bean seeds (*Vicia faba*) with seed roots were transferred into brown glass bottles filled with tap water and then populated with about 100 black bean aphids (*Aphis fabae*). Plants and aphids were then dipped into an aqueous solution of the formulated preparation to be examined for 5 seconds. After they had drained, plants and animals were stored in a climatized chamber (16 hours of light/day, 25°C, 40-60% relative atmospheric humidity). After 3 and 6 days of storage, the effect of the preparation on the aphids was determined. At a concentration of 100 ppm (based on the content of active compound), the following Compounds caused a mortality of at least 50% among the aphids:

A-18, A-64, A-65, A-71, A-74, A-79, A-81, A-86, A-88, A-206, A-209, A-223, A-255, A-261, A-262, A-265, A-267, A-268, A-292, A-296, A-312, A-312, A-316, A-317, A-326, A-329, A-349, A-353, A-354, A-355, A-365, A-366, A-367, A-369, A-373, A-381, A-398, A-431, A-524, A-529, A-540, A-544, A-564, A-605, A-626, A-691, A-697, A-713, A-736, A-737, A-738, A-744, A-745, A-747, A-748, A-798, A-799, A-805, A-822, A-861, A-862, A-865, A-867, A-874, B-37, B-40, B-47, B-65, B-74, B-149, B-150, B-151, B-152, B-155, B-158, B-163, B-166, B-167, B-168, B-169, B-170, B-176, B-184, B-185, B-189, B-247, B-251, B-255, B-258, B-259, B-261, B-267, B-269, B-296, B-313, B-349, B-353, B-354, B-355, B-366, B-369, B-373, B-398, B-431, B-564, B-713, B-736, B-737, B-738, B-744, B-745, B-747, B-748, B-799, B-805, B-822, B-861, B-863, B-864, B-865, B-867, B-869, B-870, B-871, B-873, B-874, B-877, C-85, E-85, F-85, F-88, H-85, S-548, S-550, S-551, S-552, S-553, S-555, S-556, S-558, S-559, U-3, U-7, U-20, X-45 and X-55.

30 METHOD B:

Germinated field bean seeds (*Vicia faba*) with seed roots were transferred into brown glass bottles filled with tap water. Four milliliters of an aqueous solution of the

formulated preparation to be examined were pipetted into the brown glass bottle.

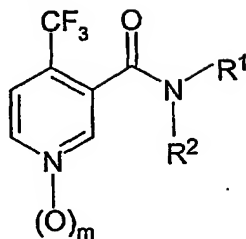
The field bean was then heavily populated with about 100 black bean aphids (*Aphis fabae*). Plants and aphids were then stored in a climatized chamber (16 hours of light/day, 25°C, 40-60% relative atmospheric humidity). After 3 and 6 days of

5 storage, the root-systemic effect of the preparation on the aphids was determined. At a concentration of 10 ppm (based on the content of active compound), the following Compounds caused a mortality of at least 80% among the aphids, by root-systemic action:

10 A-39, A-64, A-65, A-67, A-71, A-74, A-79, A-81, A-86, A-88, A-89, A-90, A-209, A-212, A-223, A-262, A-265, A-267, A-268, A-292, A-296, A-313, A-317, A-326, A-329, A-349, A-354, A-355, A-365, A-366, A-367, A-369, A-373, A-381, A-398, A-431, A-519, A-524, A-529, A-540, A-544, A-564, A-605, A-626, A-691, A-697, A-713, A-736, A-737, A-738, A-744, A-745, A-747, A-748, A-798, A-799, A-805, A-822, A-861, A-862, A-865, A-867, A-871, A-873, A-874, B-37, B-40, B-47, B-65, B-71, B-74, B-86, 15 B-149, B-150, B-151, B-152, B-155, B-158, B-166, B-167, B-169, B-170, B-176, B-184, B-189, B-247, B-251, B-255, B-257, B-258, B-259, B-261, B-267, B-269, B-296, B-313, B-349, B-353, B-354, B-355, B-366, B-369, B-373, B-398, B-564, B-713, B-736, B-737, B-738, B-744, B-745, B-748, B-799, B-805, B-861, B-863, B-864, B-865, B-867, B-869, B-870, B-871, B-872, B-873, B-874, B-877, C-85, D-86, E-85, F-85, F-20 88, G-85, H-85, S-3, S-120, S-356, S-548, S-550, S-551, S-553, S-556, S-557, S-558, S-559, U-3, U-7, U-20, X-45 and X-55.

CLAIMS

1. A compound of the formula (I):



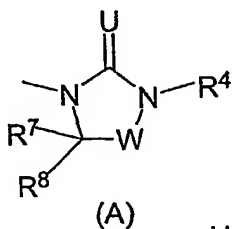
(I)

wherein:

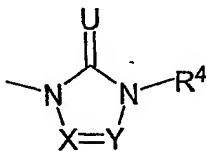
R^1 is $-C(=U)NR^3R^4$ or $-C(=V)OR^{3a}$;

R^2 is H, (C_1-C_6) alkyl or R^3 ;

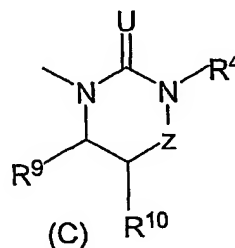
- 10 R^3 is R^5 , OH or NH_2 ; or is (C_1-C_6) alkyl substituted by one or more R^6 groups; or R^2 and R^3 together with the interconnecting atoms form a heterocyclic ring selected from (A), (B), (C), (D) and (E);



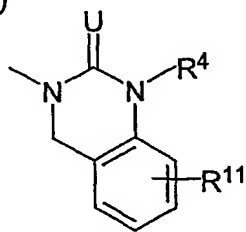
(A)



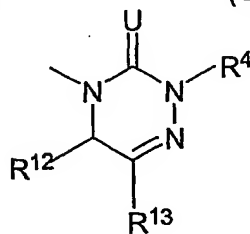
(B)



(C)



(D)



(E)

- 15 R^{3a} is (C_3-C_8) cycloalkyl or (C_3-C_8) cycloalkyl- (C_1-C_6) alkyl, which cycloalkyl groups are unsubstituted or substituted by one or more (C_1-C_6) alkyl, (C_1-C_6) haloalkyl or R^6 groups; or is (C_1-C_6) alkyl, (C_3-C_6) alkenyl or (C_3-C_6) alkynyl which last three mentioned groups are substituted by one or more R^6 groups; or is (C_1-C_6) alkylamino;

or is $\text{NH}(\text{CHR}^{14})_s\text{aryl}$ which aryl group is unsubstituted or substituted by one or more R^6 groups;

R^4 is H or R^5 ; or is $(\text{C}_1\text{-C}_6)\text{alkyl}$ unsubstituted or substituted by one or more R^6 groups;

- 5 or R^3 and R^4 together with the adjacent N atom form a 3 to 8-membered unsaturated, partially saturated or saturated heterocyclic ring which optionally contains up to three additional N, O or S atoms and which ring is unsubstituted or substituted by one or more R^6 or R^{14a} groups;

R^5 is $(\text{C}_3\text{-C}_6)\text{alkenyl}$, $(\text{C}_3\text{-C}_6)\text{alkynyl}$, $(\text{C}_3\text{-C}_8)\text{cycloalkyl}$, $(\text{C}_1\text{-C}_6)\text{alkoxy}$,

- 10 $(\text{C}_3\text{-C}_6)\text{alkenyloxy}$, $(\text{C}_3\text{-C}_6)\text{alkynyloxy}$, $(\text{C}_1\text{-C}_6)\text{alkylamino}$, di- $(\text{C}_1\text{-C}_6)\text{alkylamino}$, $\text{CO}(\text{C}_1\text{-C}_6)\text{alkyl}$, $\text{NHCO}(\text{C}_1\text{-C}_6)\text{alkyl}$, $\text{NHSO}_2(\text{C}_1\text{-C}_6)\text{alkyl}$ or $\text{SO}_2(\text{C}_1\text{-C}_6)\text{alkyl}$ which last 12 mentioned groups are unsubstituted or substituted by one or more R^6 groups; or is $(\text{C}_3\text{-C}_8)\text{cycloalkyl}-(\text{C}_1\text{-C}_6)\text{alkyl}$ which cycloalkyl group is unsubstituted or substituted by one or more R^6 groups; or is $\text{NH}(\text{CHR}^{14})_s\text{aryl}$, $-(\text{CR}^{15}\text{R}^{16})_p\text{aryl}$,

- 15 $\text{O}(\text{R}^{15}\text{R}^{16})_p\text{aryl}$, NHCOaryl , $\text{CO}(\text{CH}_2)_i\text{aryl}$, NHSO_2aryl , $\text{SO}_2(\text{CH}_2)_u\text{aryl}$ or $\text{N}=\text{C}(\text{aryl})_2$, $-(\text{CR}^{15}\text{R}^{16})_p\text{heterocyclyl}$ or $\text{O}(\text{R}^{15}\text{R}^{16})_p\text{heterocyclyl}$, which last ten mentioned aryl or heterocyclyl groups are unsubstituted or substituted by one or more R^{17} groups; or is $\text{O}(\text{CR}^{15}\text{R}^{16})_p(\text{C}_3\text{-C}_8)\text{cycloalkyl}$ or $\text{N}=\text{C}[(\text{C}_1\text{-C}_6)\text{alkyl}]_2$;

R^6 is halogen, $(\text{C}_1\text{-C}_6)\text{alkoxy}$, $(\text{C}_1\text{-C}_6)\text{haloalkoxy}$, $\text{S}(\text{O})_n\text{R}^{14a}$, CN, $\text{CO}_2(\text{C}_1\text{-C}_6)\text{alkyl}$,

- 20 CO_2H , NO_2 , OH, amino, $(\text{C}_1\text{-C}_6)\text{alkylamino}$, di- $(\text{C}_1\text{-C}_6)\text{alkylamino}$, carbamoyl, $(\text{C}_1\text{-C}_6)\text{-alkylcarbamoyl}$, di- $(\text{C}_1\text{-C}_6)\text{-alkylcarbamoyl}$ or $\text{CH}[\text{O}(\text{C}_1\text{-C}_6)\text{alkyl}]_2$; or is phenoxy unsubstituted or substituted by one or more R^{14a} or halogen groups;

R^{17} is R^6 , R^{14a} or CH_2OH ;

U is S, O or NR^{18} ;

- 25 V is O or S;

W is $(\text{CHR}^{19})_q$, CO or NR^{20} ;

X is CR^{21} or N;

Y is CR^{22} or N;

Z is O, CO or NR^{23} ;

- 30 R^7 , R^8 , R^9 , R^{12} , R^{19} , R^{21} and R^{22} are each independently H; or $(\text{C}_1\text{-C}_6)\text{alkyl}$, $(\text{C}_2\text{-C}_6)\text{alkenyl}$, $(\text{C}_2\text{-C}_6)\text{alkynyl}$, $(\text{C}_3\text{-C}_8)\text{cycloalkyl}$, $(\text{C}_1\text{-C}_6)\text{alkoxy}$, $(\text{C}_2\text{-C}_6)\text{alkenyloxy}$ or $(\text{C}_2\text{-C}_6)\text{alkynyloxy}$, which last seven mentioned groups are unsubstituted or

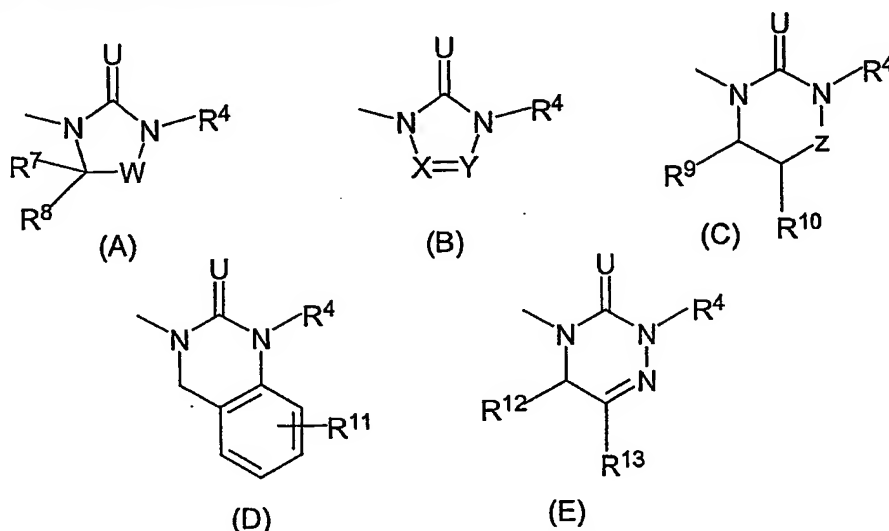
substituted by one or more R^6 groups; or is $-(CH_2)_p$ aryl or heterocyclyl, which aryl or heterocyclyl groups are unsubstituted or substituted by one or more R^6 groups; or (C_3-C_8) cycloalkyl- (C_1-C_6) alkyl which cycloalkyl group is unsubstituted or substituted by one or more R^6 groups;

- 5 or R^7 and R^8 together with the attached carbon atom may represent $C=O$;
 R^{10} , R^{20} and R^{23} are each independently H; or (C_1-C_6) alkyl, (C_3-C_6) alkenyl, (C_3-C_6) alkynyl or (C_3-C_8) cycloalkyl, which last four mentioned groups are unsubstituted or substituted by one or more R^6 groups; or is (C_3-C_8) cycloalkyl- (C_1-C_6) alkyl which cycloalkyl group is unsubstituted or substituted by one or more R^6 groups; or is
- 10 $-(CH_2)_p$ aryl or heterocyclyl which aryl or heterocyclyl groups are unsubstituted or substituted by one or more R^6 groups;
 R^{11} is R^7 , halogen, CN, $CO_2(C_1-C_6)$ alkyl, NO_2 or $S(O)_nR^{14}$; or is (C_1-C_6) alkylamino or di- (C_1-C_6) alkylamino, which groups are unsubstituted or substituted by one or more R^6 groups;
- 15 R^{13} is R^7 or OH;
 R^{14} , R^{15} and R^{16} are each independently H, (C_1-C_6) alkyl or (C_1-C_6) haloalkyl;
 R^{14a} is (C_1-C_6) alkyl or (C_1-C_6) haloalkyl;
 R^{18} is R^7 or OH; or is (C_1-C_6) alkylamino or di- (C_1-C_6) alkylamino, which groups are unsubstituted or substituted by one or more R^6 groups;
- 20 m is zero or one;
n, p, r, s, t and u are each independently zero, one or two;
q is one, two or three; and each heterocyclyl in the above mentioned radicals is independently a heterocyclic radical having 3 to 7 ring atoms and 1 to 4 hetero atoms selected from N, O and S;
- 25 or a pesticidally acceptable salt thereof;
with the exclusion of the compound wherein R^1 is $-C(=U)NR^3R^4$; U is O; R^2 is H; m is zero; R^4 is H and R^3 is 2,4-dichlorophenyl.

2. A compound according to claim 1 wherein:

- 30 R^1 is $-C(=U)NR^3R^4$ or $-C(=V)OR^{3a}$;
 R^2 is H, (C_1-C_6) alkyl or R^3 ;
 R^3 is R^5 , OH or NH_2 ; or is (C_1-C_6) alkyl substituted by one or more R^6 groups;

or R^2 and R^3 together with the interconnecting atoms form a heterocyclic ring selected from (A), (B), (C), (D) and (E);



- R^{3a} is (C_3-C_8) cycloalkyl or (C_3-C_8) cycloalkyl- (C_1-C_6) alkyl, which cycloalkyl groups are
 5 unsubstituted or substituted by one or more R^6 groups; or is (C_1-C_6) alkyl, (C_3-C_6) alkenyl or (C_3-C_6) alkynyl which last three mentioned groups are substituted by one or more R^6 groups; or is (C_1-C_6) alkylamino; or is $NH(CHR^{14})_s$ aryl which aryl group is unsubstituted or substituted by one or more R^6 groups;
 R^4 is H or R^5 ; or is (C_1-C_6) alkyl unsubstituted or substituted by one or more R^6
 10 groups;
 or R^3 and R^4 together with the adjacent N atom form a 3 to 8-membered unsaturated, partially saturated or saturated heterocyclic ring which optionally contains up to three additional N, O or S atoms and which ring is unsubstituted or substituted by one or more R^6 or R^{14a} groups;
 15 R^5 is (C_3-C_6) alkenyl, (C_3-C_6) alkynyl, (C_3-C_8) cycloalkyl, (C_1-C_6) alkoxy, (C_3-C_6) alkenyloxy, (C_3-C_6) alkynyloxy, (C_1-C_6) alkylamino, di- (C_1-C_6) alkylamino, $CO(C_1-C_6)$ alkyl, $NHCO(C_1-C_6)$ alkyl, $NHSO_2(C_1-C_6)$ alkyl or $SO_2(C_1-C_6)$ alkyl which last 12 mentioned groups are unsubstituted or substituted by one or more R^6 groups; or is (C_3-C_8) cycloalkyl- (C_1-C_6) alkyl which cycloalkyl group is unsubstituted or substituted by one or more R^6 groups; or is $NH(CHR^{14})_s$ aryl, $-(CR^{15}R^{16})_p$ aryl,
 20 $O(R^{15}R^{16})_r$ aryl, $NHCO$ aryl, $CO(CH_2)_u$ aryl, $NHSO_2$ aryl, $SO_2(CH_2)_u$ aryl or $N=C(aryl)_2$, $-(CR^{15}R^{16})_p$ heterocyclyl or $O(R^{15}R^{16})_r$ heterocyclyl, which last ten mentioned aryl or

- heterocyclyl groups are unsubstituted or substituted by one or more R^{17} groups; or is $O(CR^{15}R^{16})_p(C_3-C_8)cycloalkyl$ or $N=C[(C_1-C_6)alkyl]_2$;
- R^6 is halogen, $(C_1-C_6)alkoxy$, $(C_1-C_6)haloalkoxy$, $S(O)_nR^{14a}$, CN , $CO_2(C_1-C_6)alkyl$, CO_2H , NO_2 , OH , amino, $(C_1-C_6)alkylamino$, di- $(C_1-C_6)alkylamino$, carbamoyl, $(C_1-C_6)alkylcarbamoyl$, di- $(C_1-C_6)alkylcarbamoyl$ or $CH[O(C_1-C_6)alkyl]_2$; or is phenoxy unsubstituted or substituted by one or more R^{14a} or halogen groups;
- R^{17} is R^6 , R^{14a} or CH_2OH ;
- U is S , O or NR^{18} ;
- V is O or S ;
- 10 W is $(CHR^{19})_q$, CO or NR^{20} ;
- X is CR^{21} or N ;
- Y is CR^{22} or N ;
- Z is O , CO or NR^{23} ;
- R^7 , R^8 , R^9 , R^{12} , R^{19} , R^{21} and R^{22} are each independently H ; or $(C_1-C_6)alkyl$, $(C_2-C_6)alkenyl$, $(C_2-C_6)alkynyl$, $(C_3-C_8)cycloalkyl$, $(C_1-C_6)alkoxy$, $(C_2-C_6)alkenyloxy$ or $(C_2-C_6)alkynyloxy$, which last seven mentioned groups are unsubstituted or substituted by one or more R^6 groups; or is $-(CH_2)_paryl$ or heterocyclyl, which aryl or heterocyclyl groups are unsubstituted or substituted by one or more R^6 groups; or $(C_3-C_8)cycloalkyl-(C_1-C_6)alkyl$ which cycloalkyl group is unsubstituted or substituted by
- 20 one or more R^6 groups;
- or R^7 and R^8 together with the attached carbon atom may represent $C=O$;
- R^{10} , R^{20} and R^{23} are each independently H ; or $(C_1-C_6)alkyl$, $(C_3-C_6)alkenyl$, $(C_3-C_6)alkynyl$ or $(C_3-C_8)cycloalkyl$, which last four mentioned groups are unsubstituted or substituted by one or more R^6 groups; or is $(C_3-C_8)cycloalkyl-(C_1-C_6)alkyl$ which cycloalkyl group is unsubstituted or substituted by one or more R^6 groups; or is
- 25 $-(CH_2)_paryl$ or heterocyclyl which aryl or heterocyclyl groups are unsubstituted or substituted by one or more R^6 groups;
- R^{11} is R^7 , halogen, CN , $CO_2(C_1-C_6)alkyl$, NO_2 or $S(O)_nR^{14}$; or is $(C_1-C_6)alkylamino$ or di- $(C_1-C_6)alkylamino$, which groups are unsubstituted or substituted by one or more
- 30 R^6 groups;
- R^{13} is R^7 or OH ;
- R^{14} , R^{15} and R^{16} are each independently H , $(C_1-C_6)alkyl$ or $(C_1-C_6)haloalkyl$;

R^{14a} is (C_1-C_6) alkyl or (C_1-C_6) haloalkyl;

R^{18} is R^7 or OH; or is (C_1-C_6) alkylamino or di- (C_1-C_6) alkylamino, which groups are unsubstituted or substituted by one or more R^6 groups;

m is zero or one;

5 n, p, r, s, t and u are each independently zero, one or two;

q is one, two or three; and each heterocyclyl in the above mentioned radicals is independently a heterocyclic radical having 3 to 7 ring atoms and 1 to 4 hetero atoms selected from N, O and S;

or a pesticidally acceptable salt thereof;

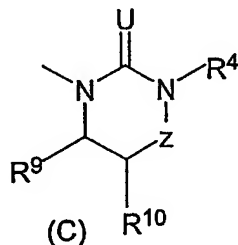
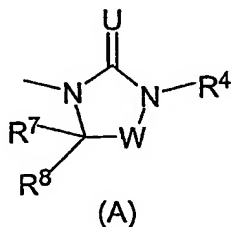
10 with the exclusion of the compound wherein R^1 is $-C(=U)NR^3R^4$; U is O; R^2 is H; m is zero; R^4 is H and R^3 is 2,4-dichlorophenyl.

3. A compound or a salt thereof as claimed in claim 1 or 2, wherein R^1 is $-C(=U)NR^3R^4$.

15

4. A compound or a salt thereof as claimed in claim 1, 2 or 3, wherein R^2 is H or R^3 .

5. A compound or a salt thereof as claimed in any one of claims 1 to 4, wherein
20 R^3 is R^5 or OH; or is (C_1-C_6) alkyl substituted by one or more R^6 groups; or R^2 and R^3 together with the interconnecting atoms form a heterocyclic ring selected from (A) and (C):



25 6. A compound or a salt thereof as claimed in any one of claims 1 to 5, wherein R^4 is H or R^5 , or is (C_1-C_6) alkyl unsubstituted or substituted by one or more R^6 groups;

or R³ and R⁴ together with the adjacent N atom may form a 3 to 8-membered unsaturated, partially saturated or saturated heterocyclic ring which optionally contains up to three additional N, O or S atoms and which ring is unsubstituted or substituted by one or more R⁶ or R^{14a} groups.

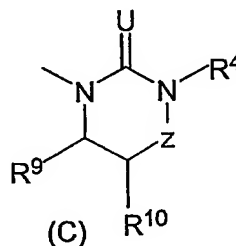
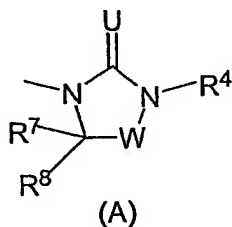
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7. A compound or a salt thereof as claimed in any one of claims 1 to 6, wherein R¹ is -C(=U)NR³R⁴;

R² is H;

R³ is R⁵ or OH; or is (C₁-C₆)alkyl substituted by one or more R⁶ groups;

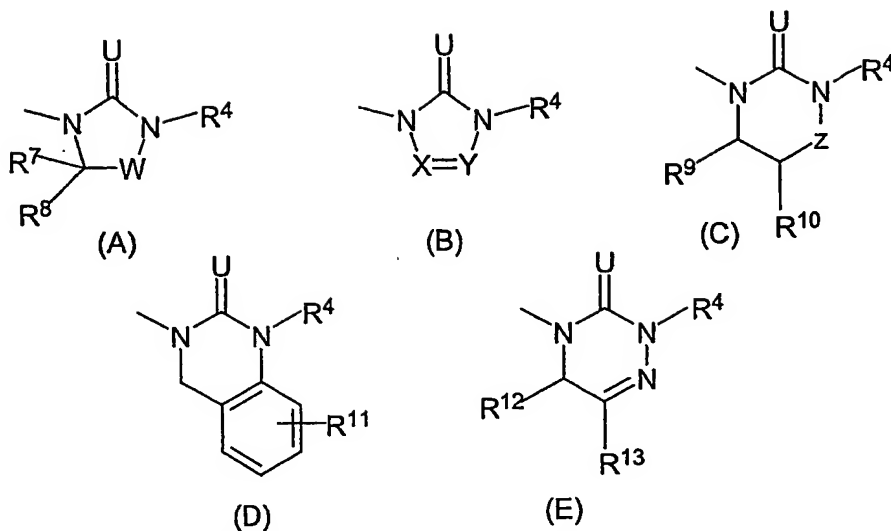
10 or R² and R³ together with the interconnecting atoms may form a heterocyclic ring selected from (A) and (C):



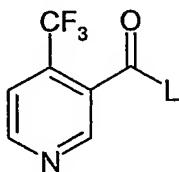
- 15 R⁴ is H or R⁵, or is (C₁-C₆)alkyl unsubstituted or substituted by one or more R⁶ groups;
- or R³ and R⁴ together with the adjacent N atom may form a pyrrolidin-1-yl, piperidin-1-yl, morpholin-1-yl or thiomorpholin-1-yl (or its S-oxide or S, S-dioxide) ring;
- R⁵ is (C₃-C₆)alkenyl, (C₃-C₆)alkynyl, (C₃-C₈)cycloalkyl, (C₃-C₈)cycloalkyl-(C₁-C₆)alkyl, (C₁-C₆)alkoxy, (C₃-C₆)alkenyloxy, (C₃-C₆)alkynyloxy or O(CR¹⁵R¹⁶)_p(C₃-C₈)cycloalkyl;
- 20 or -(CR¹⁵R¹⁶)_pphenyl, -(CR¹⁵R¹⁶)_pheterocyclyl, O(CR¹⁵R¹⁶)_rphenyl or O(CR¹⁵R¹⁶)_rheterocyclyl, which last four mentioned phenyl or heterocyclyl groups are unsubstituted or substituted by one or more R¹⁷ groups;
- R⁶ is halogen, (C₁-C₆)alkoxy, (C₁-C₆)haloalkoxy, S(O)_nR^{14a}, CN, NO₂ or OH;
- R¹⁷ is R⁶, R^{14a} or CH₂OH;
- 25 U is S or O;
- W is (CHR¹⁹)_q or CO;
- Z is O;

- R^7, R^8, R^9, R^{10} and R^{19} are each H; or (C_1-C_6) alkyl unsubstituted or substituted by one or more R^6 groups;
 or R^7 and R^8 together with the attached carbon atom represent $C=O$;
 R^{14}, R^{15} and R^{16} are each H or (C_1-C_6) alkyl;
 5 R^{14a} is (C_1-C_6) alkyl or (C_1-C_6) haloalkyl;
 m is zero;
 n, r, s, t and u are zero, one or two;
 q is one; and wherein heterocyclyl denotes a pyridine, pyrimidine, (1,2,4)-oxadiazole, (1,3,4)-oxadiazole, (1,2,4)-thiadiazole, (1,3,4)-thiadiazole, pyrrole, furan, thiophene,
 10 oxazole, thiazole, benzothiazole, imidazole, pyrazole, isoxazole, 1,2,4-triazole, tetrazole, pyrazine, pyridazine, oxazoline, thiazoline, tetrahydrofuran, tetrahydropyran, morpholine, piperidine, piperazine, pyrroline, pyrrolidine, oxazolidine, thiazolidine, oxirane or oxetane radical.
- 15 8. A compound or a salt thereof as claimed in claim 1, wherein R^1 is $-C(=U)NR^3R^4$;
 R^2 is H;
 U is O or S;
 R^3 is (C_1-C_6) alkoxy, (C_1-C_6) haloalkoxy, (C_3-C_6) alkenyloxy, (C_3-C_6) alkynyloxy,
 20 CH_2 phenyl or OCH_2 phenyl, phenyl or 2-pyridyl which last four mentioned phenyl or pyridyl groups are unsubstituted or substituted by one or more groups selected from halogen, (C_1-C_6) alkyl, (C_1-C_6) alkoxy, CN and NO_2 ;
 R^4 is H, (C_1-C_6) alkyl, (C_3-C_6) alkenyl, (C_3-C_6) alkynyl or CH_2 phenyl; and
 m is zero.
- 25 9. A process for the preparation of a compound of formula (I) or a salt thereof as defined in any one of claims 1 to 8, which process comprises:
 a) where R^1 is $-C(=U)NR^3R^4$, m is zero, and R^2, U, R^3 and R^4 are as defined in formula (I); or R^2 and R^3 together with the interconnecting atoms form a heterocyclic
 30 ring selected from (A), (B), (C), (D) and (E);

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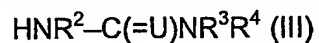
wherein R⁴, R⁷, R⁸, R⁹, R¹⁰, R¹¹, R¹², R¹³, W, X, Y and Z are as defined in formula (I),
the reaction of a compound of formula (II):



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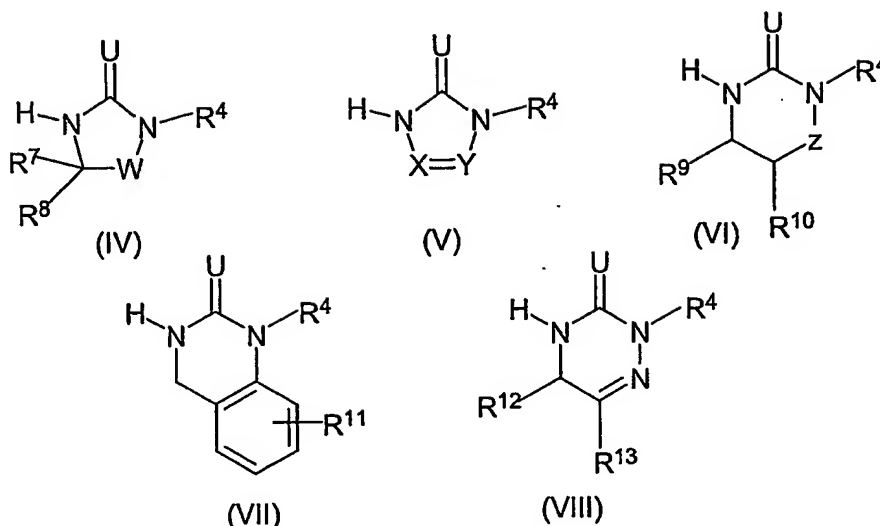
(II)

wherein L is a leaving group, with a compound of formula (III):



wherein R², U, R³ and R⁴ are as defined in formula (I), or with a compound of formula (IV), (V), (VI); (VII) or (VIII):

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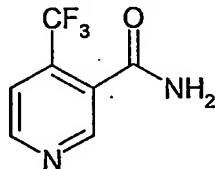


wherein R⁴, R⁷, R⁸, R⁹, R¹⁰, R¹¹, R¹², R¹³, W, X, Y and Z are as defined in formula (I);

or

b) where R¹ is -C(=U)NR³R⁴, m is zero, R² is H, U is O, and R³ and R⁴ are as

5 defined in formula (I), the reaction of a compound of formula (IX):



(IX)

with oxalyl chloride or triphosgene, to give the corresponding acylisocyanate intermediate followed by reaction with an amine of formula (X):



wherein R³ and R⁴ are as defined in formula (I); or

c) where R¹ is -C(=V)OR^{3a}, m is zero, R² is H, V is O, and R^{3a} is as defined in formula (I), the reaction of a compound of formula (IX) above, with oxalyl chloride to give an acylisocyanate intermediate, followed by reaction with an alcohol of formula

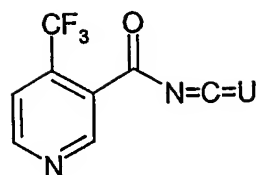
15 (XI):



wherein R³ is as defined in formula (I); or

d) where R¹ is -C(=U)NR³R⁴, m is zero, R² is H, U is O or S, and R³ and R⁴ are as defined in formula (I), the reaction of a compound of formula (XII).

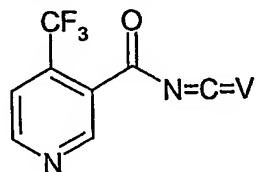
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(XII)

wherein U is O or S, with a compound of formula (X) as defined in formula (I); or

- e) where R^1 is $-C(=V)OR^{3a}$, m is zero, R^2 is H, V is O or S, and R^{3a} is as defined in formula (I), the reaction of a compound of formula (XIII).



(XIII)

wherein V is O or S, with a compound of formula (XI) as defined above; or

- f) where R^1 is $-C(=U)NR^3R^4$, m is zero, R^2 is H, R^4 is H, U is O or S, and R^3 is as defined in formula (I), the reaction of a compound of formula (IX) as defined in formula (I), with a strong base, followed by reaction with a compound of formula (XIV):



wherein R^3 is as defined in formula (I); or

- g) where R^1 is $-C(=U)NR^3R^4$ or $-C(=V)OR^{3a}$, m is zero, R^2 is H, U and V are each S, and R^3 , R^{3a} and R^4 are as defined in formula (I), the 1-pot reaction of 4-trifluoromethylnicotinic acid with a halogenating agent to give the corresponding acid chloride, followed by reaction with an alkali metal thiocyanate or ammonium thiocyanate or a tetraalkylammonium thiocyanate to give the 4-trifluoromethyl-3-pyridylcarbonyl isothiocyanate, followed by reaction with an amine of formula (X) above or an alcohol of formula (XI) above; or
- h) where R^1 and R^2 are as defined above, and m is 1 the oxidation of a corresponding compound in which m is 0; and
- if desired, converting a resulting compound of formula (I) into a pesticidally acceptable salt thereof.

10. A pesticidal composition comprising a compound of formula (I) or a pesticidally acceptable salt thereof as defined in any one of claims 1 to 8, in association with a pesticidally acceptable diluent or carrier and/or surface active agent.
- 5
11. The use of compounds of the formula (I) or their salts as claimed in any of claims 1 to 8 as pesticides.

INTERNATIONAL SEARCH REPORT

International Application No.

PCT/EP 03/04714

A. CLASSIFICATION OF SUBJECT MATTER

IPC 7 C07D213/82 C07D401/06 C07D413/06 A01N43/40 A01N43/50
A01N43/54 A01N43/653 A01N43/713 A01N43/88

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 C07D A01N

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the International search (name of data base and, where practical, search terms used)

EPO-Internal, WPI Data, PAJ, BEILSTEIN Data

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	EP 0 580 374 A (ISHIHARA SANGYO KAISHA LTD.) 26 January 1994 (1994-01-26) cited in the application Table 1, compounds 9, 17, 34, 49, 106, 110, claims	1-10
X	DATABASE WPI Week 0214 Derwent Publications Ltd., London, GB; AN 106161 XP002215212 & WO 01 90075 A (ISHIHARA SANGYO KAISHA LTD.), 29 November 2001 (2001-11-29) abstract	1-10
A	DE 100 14 006 A (AVENTIS CROPSCIENCE) 27 September 2001 (2001-09-27) claims; examples	1-10
-/--		

☒ Further documents are listed in the continuation of box C.☒ Patent family members are listed in annex.

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Date of the actual completion of the international search

11 September 2003

Date of mailing of the international search report

19/09/2003

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INTERNATIONAL SEARCH REPORT

International Application No

PCT/EP 03/04714

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	DATABASE WPI Week 0125 Derwent Publications Ltd., London, GB; AN 244289 XP002215213 & WO 01 14340 A (ISHIHARA SANGYO KAISHA LTD.), 1 March 2001 (2001-03-01) abstract -----	1-10
A	DE 199 58 166 A (BAYER AG) 14 December 2000 (2000-12-14) claims; examples -----	1-10

INTERNATIONAL SEARCH REPORT

Information on patent family members

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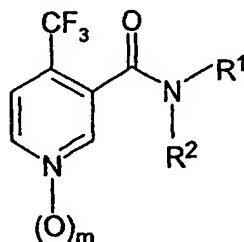
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(54) Title: PYRIDINE CARBOXAMIDE DERIVATIVES AND THEIR USE AS PESTICIDES



(I)

(57) Abstract: The invention relates to a 3-pyridylcarboxamide derivative of formula (I). Wherein the various symbols are as defined in the description, compositions thereof, their use for the control of pests, and to processes for their preparation.

PYRIDINE CARBOXAMIDE DERIVATIVES AND THEIR USE AS PESTICIDES

The invention relates to 3-pyridylcarboxamide derivatives and their use for the control of pests, in particular arthropods such as insects and acarids, and helminths (including nematodes); to compositions containing them, and to processes and intermediates for their preparation.

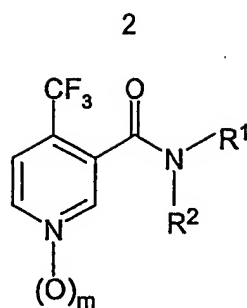
The control of insects, nematodes or helminths with 3-pyridylcarboxamide compounds has been described in many patents such as EP 580374, JP 10101648, JP 10182625, WO 200109104, WO 200114340, JP 6321903, JP 10195072 and JP 11180957.

However, the level of action and/or duration of action of these prior-art compounds is not entirely satisfactory in all fields of application, in particular against certain organisms or when low concentrations are applied.

Since modern pesticides must meet a wide range of demands, for example regarding level, duration and spectrum of action, use spectrum, toxicity, combination with other active substances, combination with formulation auxiliaries or synthesis, and since the occurrence of resistances is possible, the development of such substances can never be regarded as concluded, and there is constantly a high demand for novel compounds which are advantageous over the known compounds, at least as far as some aspects are concerned.

It is an object of the present invention to provide compounds which widen the spectrum of the pesticides in various aspects.

The present invention provides a compound which is a 3-pyridylcarboxamide derivative of formula (I):



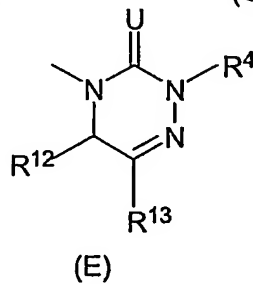
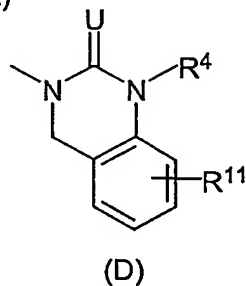
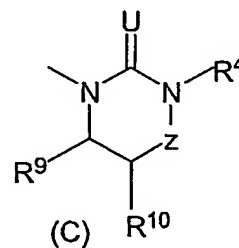
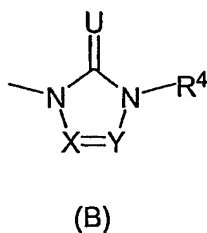
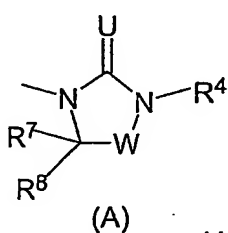
(I)

wherein:

R^1 is $-C(=U)NR^3R^4$ or $-C(=V)OR^{3a}$;

5 R^2 is H, (C_1-C_6) alkyl or R^3 ;

R^3 is R^5 , OH or NH_2 ; or is (C_1-C_6) alkyl substituted by one or more R^6 groups;
or R^2 and R^3 together with the interconnecting atoms form a heterocyclic ring
selected from (A), (B), (C), (D) and (E);



- 10 R^{3a} is (C_3-C_8) cycloalkyl or (C_3-C_8) cycloalkyl- (C_1-C_6) alkyl, which cycloalkyl groups are unsubstituted or substituted by one or more (C_1-C_6) alkyl, (C_1-C_6) haloalkyl or R^6 groups; or is (C_1-C_6) alkyl, (C_3-C_6) alkenyl or (C_3-C_6) alkynyl which last three mentioned groups are substituted by one or more R^6 groups; or is (C_1-C_6) alkylamino; or is $NH(CHR^{14})_s$ aryl which aryl group is unsubstituted or substituted by one or more
- 15 R^6 groups;
 R^4 is H or R^5 ; or is (C_1-C_6) alkyl unsubstituted or substituted by one or more R^6 groups;

- or R³ and R⁴ together with the adjacent N atom form a 3 to 8-membered unsaturated, partially saturated or saturated heterocyclic ring which optionally contains up to three additional N, O or S atoms and which ring is unsubstituted or substituted by one or more R⁶ or R^{14a} groups (preferred examples of such ring systems include pyrrolidin-1-yl, pyrrolin-1-yl, piperidin-1-yl, morpholin-1-yl (or its N-oxide), thiomorpholin-1-yl (or its S-oxide or S, S-dioxide), 4,5-dihydropyrazol-1-yl or pyrazol-1-yl);
- R⁵ is (C₃-C₆)alkenyl, (C₃-C₆)alkynyl, (C₃-C₈)cycloalkyl, (C₁-C₆)alkoxy, (C₃-C₆)alkenyloxy, (C₃-C₆)alkynyloxy, (C₁-C₆)alkylamino, di-(C₁-C₆)alkylamino, CO(C₁-C₆)alkyl, NHCO(C₁-C₆)alkyl, NHSO₂(C₁-C₆)alkyl or SO₂(C₁-C₆)alkyl which last 12 mentioned groups are unsubstituted or substituted by one or more R⁶ groups; or is (C₃-C₈)cycloalkyl-(C₁-C₆)alkyl which cycloalkyl group is unsubstituted or substituted by one or more R⁶ groups; or is NH(CHR¹⁴)_saryl, -(CR¹⁵R¹⁶)_paryl, O(R¹⁵R¹⁶)_iaryl, NHCOaryl, CO(CH₂)_iaryl, NHSO₂aryl, SO₂(CH₂)_uaryl or N=C(aryl)₂, -(CR¹⁵R¹⁶)_pheterocyclyl or O(R¹⁵R¹⁶)_iheterocyclyl, which last ten mentioned aryl or heterocyclyl groups are unsubstituted or substituted by one or more R¹⁷ groups; or is O(CR¹⁵R¹⁶)_p(C₃-C₈)cycloalkyl or N=C[(C₁-C₆)alkyl]₂;
- R⁶ is halogen, (C₁-C₆)alkoxy, (C₁-C₆)haloalkoxy, S(O)_nR^{14a}, CN, CO₂(C₁-C₆)alkyl, CO₂H, NO₂, OH, amino, (C₁-C₆)alkylamino, di-(C₁-C₆)alkylamino, carbamoyl, (C₁-C₆)-alkylcarbamoyl, di-(C₁-C₆)-alkylcarbamoyl or CH[O(C₁-C₆)alkyl]₂; or is phenoxy unsubstituted or substituted by one or more R^{14a} or halogen groups;
- R¹⁷ is R⁶, R^{14a} or CH₂OH;
- U is S, O or NR¹⁸;
- V is O or S;
- W is (CHR¹⁹)_q, CO or NR²⁰;
- X is CR²¹ or N;
- Y is CR²² or N;
- Z is O, CO or NR²³;
- R⁷, R⁸, R⁹, R¹², R¹⁹, R²¹ and R²² are each independently H; or (C₁-C₆)alkyl, (C₂-C₆)alkenyl, (C₂-C₆)alkynyl, (C₃-C₈)cycloalkyl, (C₁-C₆)alkoxy, (C₂-C₆)alkenyloxy or (C₂-C₆)alkynyloxy, which last seven mentioned groups are unsubstituted or substituted by one or more R⁶ groups; or is -(CH₂)_paryl or heterocyclyl, which aryl or

- heterocyclyl groups are unsubstituted or substituted by one or more R^6 groups; or (C₃-C₈)cycloalkyl-(C₁-C₆)alkyl which cycloalkyl group is unsubstituted or substituted by one or more R^6 groups;
- or R^7 and R^8 together with the attached carbon atom may represent C=O;
- 5 R^{10} , R^{20} and R^{23} are each independently H; or (C₁-C₆)alkyl, (C₃-C₆)alkenyl, (C₃-C₆)alkynyl or (C₃-C₈)cycloalkyl, which last four mentioned groups are unsubstituted or substituted by one or more R^6 groups; or is (C₃-C₈)cycloalkyl-(C₁-C₆)alkyl which cycloalkyl group is unsubstituted or substituted by one or more R^6 groups; or is -(CH₂)_paryl or heterocyclyl which aryl or heterocyclyl groups are unsubstituted or
- 10 substituted by one or more R^6 groups;
- R^{11} is R^7 , halogen, CN, CO₂(C₁-C₆)alkyl, NO₂ or S(O)_n R^{14} ; or is (C₁-C₆)alkylamino or di-(C₁-C₆)alkylamino, which groups are unsubstituted or substituted by one or more R^6 groups;
- R^{13} is R^7 or OH;
- 15 R^{14} , R^{15} and R^{16} are each independently H, (C₁-C₆)alkyl or (C₁-C₆)haloalkyl;
- R^{14a} is (C₁-C₆)alkyl or (C₁-C₆)haloalkyl;
- R^{18} is R^7 or OH; or is (C₁-C₆)alkylamino or di-(C₁-C₆)alkylamino, which groups are unsubstituted or substituted by one or more R^6 groups;
- m is zero or one;
- 20 n, p, r, s, t and u are each independently zero, one or two;
- q is one, two or three; and each heterocyclyl in the above mentioned radicals is independently a heterocyclic radical having 3 to 7 ring atoms and 1 to 4 hetero atoms selected from N, O and S;
- or a pesticidally acceptable salt thereof;
- 25 with the exclusion of the compound wherein R^1 is -C(=U)NR³R⁴; U is O; R^2 is H; m is zero; R^4 is H and R^3 is 2,4-dichlorophenyl.

These compounds possess valuable pesticidal properties.

- 30 The invention also encompasses any stereoisomer, enantiomer or geometric isomer, and mixtures thereof.

By the term "pesticidally acceptable salts" is meant salts the cations or anions of which are known and accepted in the art for the formation of salts for pesticidal use. Suitable salts with bases, e.g. formed by compounds of formula (I) containing a carboxy or OH group, include alkali metal (e.g. sodium and potassium), alkaline earth metal (e.g. calcium and magnesium), ammonium and amine (e.g. diethanolamine, triethanolamine, octylamine, morpholine and dioctylmethylamine) salts. Suitable acid addition salts, e.g. formed by compounds of formula (I) containing an amino group, include salts with inorganic acids, for example hydrochlorides, sulphates, phosphates and nitrates and salts with organic acids for example acetic acid.

The term pests means arthropod pests (including insects and acarids), and helminths (including nematodes).

In the present patent specification, including the accompanying claims, the aforementioned substituents have the following meanings:

halogen atom means fluorine, chlorine, bromine or iodine;

alkyl groups and portions thereof (unless otherwise defined) may be straight- or branched-chain;

cycloalkyl groups preferably have from three to six carbon atoms in the ring and are optionally substituted by halogen or alkyl.

The haloalkyl and haloalkoxy groups can bear one or more halogen atoms; preferred groups of this type include $-CF_3$ and $-OCF_3$.

The term "halo" before the name of a radical means that this radical is partially or completely halogenated, that is to say, substituted by F, Cl, Br, or I, in any combination, preferably by F or Cl.

The expression "(C₁-C₆)-alkyl" is to be understood as meaning an unbranched or branched hydrocarbon radical having 1, 2, 3, 4, 5 or 6 carbon atoms, such as, for example a methyl, ethyl, propyl, isopropyl, 1-butyl, 2-butyl, 2-methylpropyl or tert-butyl radical.

"(C₁-C₆)-Haloalkyl" is to be understood as meaning an alkyl group mentioned under the expression "(C₁-C₆)-alkyl" in which one or more hydrogen atoms are replaced by the same number of identical or different halogen atoms, preferably by chlorine or fluorine, such as the trifluoromethyl, the 1-fluoroethyl, the 2,2,2-trifluoroethyl, the chloromethyl, fluoromethyl, the difluoromethyl or the 1,1,2,2-tetrafluoroethyl group.

"(C₁-C₆)-Alkoxy" is to be understood as meaning an alkoxy group whose hydrocarbon radical has the meaning given under the expression "(C₁-C₆)-alkyl".

10 The terms "alkenyl" and "alkynyl" with a range of carbon atoms stated as prefix denote a straight-chain or branched hydrocarbon radical having a number of carbon atoms which corresponds to this stated range and which contains at least one multiple bond which can be located in any position of the respective unsaturated radical. "(C₂-C₆)-Alkenyl" accordingly denotes, for example, the vinyl, allyl, 2-methyl-
15 2-propenyl, 2-butenyl, pentenyl, 2-methylpentenyl or the hexenyl group. "(C₂-C₆)-Alkynyl" denotes, for example, the ethynyl, propargyl, 2-methyl-2-propynyl; 2-butylnyl; 2-pentynyl or the 2-hexynyl group.

"(C₃-C₈)-Cycloalkyl" denotes monocyclic alkyl radicals, such as the cyclopropyl, cyclobutyl, cyclopentyl, cyclohexyl, cycloheptyl or cyclooctyl radical, and denotes
20 bicyclic alkyl radicals, such as the norbornyl radical.

The expression "(C₃-C₈)-cycloalkyl-(C₁-C₆)-alkyl" is to be understood as meaning, for example the cyclopropylmethyl, cyclopentylmethyl, cyclohexylmethyl, cyclohexylethyl, cyclohexylbutyl, 1-methylcyclopropyl, 1-methylcyclopentyl,
25 1-methylcyclohexyl, 3-hexylcyclobutyl or the 4-tert-butylcyclohexyl radical.

"(C₁-C₆)-Alkylamino" denotes a nitrogen atom which is substituted by an alkyl radical of the above definition. "Di-(C₁-C₆)-alkylamino" denotes a nitrogen atom which is
30 substituted by two alkyl radical of the above definition.

The expression "(C₁-C₆)-alkylcarbamoyl" denotes a carbamoyl group having one hydrocarbon radical which has the meaning given under the expression "(C₁-C₆)-alkyl"; and "di-(C₁-C₆)-alkylcarbamoyl" denotes a carbamoyl group having two hydrocarbon radicals which can be identical or different.

5

The expression "aryl" is to be understood as meaning a carbocyclic, i.e. constructed of carbon atoms, aromatic radical having preferably 6 to 14, in particular 6 to 12, carbon atoms, such as, for example, phenyl, naphthyl or biphenyl, preferably phenyl.

10

The expression "heterocyclyl" preferably denotes a cyclic radical which can be completely saturated, partially unsaturated or completely unsaturated and which contains in the ring one or more identical or different atoms selected from the group consisting of nitrogen, sulfur and oxygen, where, however, two oxygen atoms may not be directly adjacent and at least one carbon atom has to be present in the ring, such as, for example, a thiophene, furan, pyrrole, thiazole, oxazole, imidazole, isothiazole, isoxazole, pyrazole, 1,3,4-oxadiazole, 1,3,4-thiadiazole, 1,3,4-triazole, 1,2,4-oxadiazole, 1,2,4-thiadiazole, 1,2,4-triazole, 1,2,3-triazole, 1,2,3,4-tetrazole, benzo[b]thiophene, benzo[b]furan, indole, benzo[c]thiophene, benzo[c]furan, isoindole, benzoxazole, benzothiazole, benzimidazole, benzisoxazole, benzisothiazole, benzopyrazole, benzothiadiazole, benzotriazole, dibenzofuran, dibenzothiophene, carbazole, pyridine, pyrazine, pyrimidine, pyridazine, 1,3,5-triazine, 1,2,4-triazine, 1,2,4,5-tetrazine, quinoline, isoquinoline, quinoxaline, quinazoline, cinnoline, 1,8-naphthyridine, 1,5-naphthyridine, 1,6-naphthyridine, 1,7-naphthyridine, phthalazine, pyridopyrimidine, purine, pteridine, 4H-quinolizine, piperidine, pyrrolidine, oxazoline, tetrahydrofuran, tetrahydropyran, isoxazolidine, thiazolidine, oxirane or oxetane radical.

25

Heterocyclyl preferably denotes a saturated, partially saturated or aromatic ring system having 3 to 7 ring members and 1 to 4 heteroatoms selected from the group consisting of O, S and N, where at least one carbon atom has to be present in the ring.

30

More preferably, heterocyclyl denotes a pyridine, pyrimidine, (1,2,4)-oxadiazole, (1,3,4)-oxadiazole, (1,3,4)-thiadiazole, (1,2,4)-thiadiazole, pyrrole, furan, thiophene, oxazole, thiazole, benzothiazole, imidazole, pyrazole, isoxazole, 1,2,4-triazole, tetrazole, pyrimidine, pyrazine, pyridazine, oxazoline, thiazoline, tetrahydrofuran, tetrahydropyran, morpholine, piperidine, piperazine, pyrroline, pyrrolidine, oxazolidine or thiazolidine radical (particularly a pyridine, pyrimidine, (1,2,4)-oxadiazole, (1,3,4)-oxadiazole, (1,3,4)-thiadiazole, 1,2,4-thiadiazole, thiazole, pyrazole, pyrrole, isoxazole, benzothiazole, 1,2,4-triazole, pyrazine, pyridazine, oxirane or oxetane radical).

Preferred substituents for the various aliphatic, aromatic and heterocyclic ring systems include halogen, nitro, cyano, (C₁-C₄)-alkyl, (C₃-C₆)-cycloalkyl, (C₁-C₄)-alkoxy, (C₁-C₄)-alkylthio, (C₁-C₄)-alkylsulfinyl, (C₁-C₄)-alkylsulfonyl, phenyl, benzyl or phenoxy, where in the alkyl radicals and the radicals derived therefrom one or more – and in the case of fluorine up to the maximum number of – hydrogen atoms can be replaced by halogen, preferably chlorine or fluorine.

More preferred substituents include halogen, nitro, cyano, (C₁-C₄)-alkyl, (C₁-C₄)-haloalkyl, (C₃-C₆)-cycloalkyl, (C₁-C₄)-alkoxy, (C₁-C₄)-haloalkoxy, (C₁-C₄)-alkylthio or (C₁-C₄)-haloalkylthio.

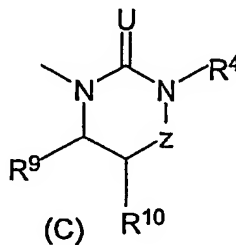
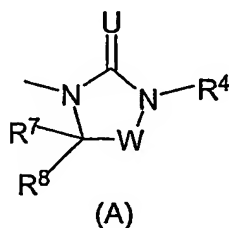
Most preferred substituents include halogen, nitro, cyano, (C₁-C₄)-alkyl, (C₁-C₄)-haloalkyl, (C₁-C₄)-alkoxy, (C₁-C₄)-haloalkoxy, (C₁-C₄)-alkylthio or (C₁-C₄)-haloalkylthio.

It is to be generally understood, unless otherwise stated, that the term "unsubstituted or substituted by one or more groups" or "unsubstituted or substituted by one or more groups selected from" means that such groups (or preferred groups) may be the same or different.

R¹ is preferably –C(=U)NR³R⁴;

R² is preferably H or R³ (more preferably R² is H);

R³ is preferably R⁵ or OH; or is (C₁-C₆)alkyl substituted by one or more R⁶ groups; or preferably R² and R³ together with the interconnecting atoms form a heterocyclic ring selected from (A) and (C):



5

R⁴ is preferably H or R⁵, or is (C₁-C₆)alkyl unsubstituted or substituted by one or more R⁶ groups;

or R³ and R⁴ together with the adjacent N atom may form a 3 to 8-membered unsaturated, partially saturated or saturated heterocyclic ring which optionally

10 contains up to three additional N, O or S atoms and which ring is unsubstituted or substituted by one or more R⁶ or R^{14a} groups (particularly preferred examples of such ring systems include pyrrolidin-1-yl, piperidin-1-yl, morpholin-1-yl, thiomorpholin-1-yl or its S-oxide or S, S-dioxide);

R⁵ is preferably (C₃-C₆)alkenyl, (C₃-C₆)alkynyl, (C₃-C₈)cycloalkyl, (C₃-

15 C₈)cycloalkyl-(C₁-C₆)alkyl, (C₁-C₆)alkoxy, (C₃-C₆)alkenyloxy, (C₃-C₆)alkynyloxy or O(CR¹⁵R¹⁶)_p(C₃-C₈)cycloalkyl; or is -(CR¹⁵R¹⁶)_pphenyl, -(CR¹⁵R¹⁶)_pheterocyclyl, O(CR¹⁵R¹⁶)_rphenyl or O(CR¹⁵R¹⁶)_rheterocyclyl, which last four mentioned phenyl or heterocyclyl groups are unsubstituted or substituted by one or more R¹⁷ groups;

(more preferably R⁵ is (C₃-C₆)alkenyl, (C₃-C₆)alkynyl, (C₁-C₆)alkoxy, (C₃-
20 C₆)alkenyloxy, (C₃-C₆)alkynyloxy or O(CR¹⁵R¹⁶)_p(C₃-C₈)cycloalkyl; or is -(CR¹⁵R¹⁶)_pphenyl, -(CR¹⁵R¹⁶)_pheterocyclyl, O(CR¹⁵R¹⁶)_rphenyl or O(CR¹⁵R¹⁶)_rheterocyclyl, which last four mentioned phenyl or heterocyclyl groups are unsubstituted or substituted by one or more R¹⁷ groups);

R⁶ is preferably halogen, (C₁-C₆)alkoxy, (C₁-C₆)haloalkoxy, S(O)_nR^{14a}, CN, NO₂ or
25 OH; (more preferably R⁶ is halogen or CN);

R¹⁷ is preferably R⁶, R^{14a} or CH₂OH;

U is preferably S or O;

W is preferably (CHR¹⁹)_q or CO;

Z is preferably O;

R^7 , R^8 , R^9 , R^{10} and R^{19} are each preferably H; or (C₁-C₆)alkyl unsubstituted or substituted by one or more R^6 groups;

or R^7 and R^8 together with the attached carbon atom represent C=O;

5 R^{14} , R^{15} and R^{16} are each preferably H or (C₁-C₆)alkyl;

R^{14a} is preferably (C₁-C₆)alkyl or (C₁-C₆)haloalkyl;

m is preferably zero;

n, r, s, t and u are preferably zero or one;

q is preferably one; and

10 heterocyclyl preferably denotes a pyridine, pyrimidine, (1,2,4)-oxadiazole, (1,3,4)-oxadiazole, (1,2,4)-thiadiazole, (1,3,4)-thiadiazole, benzothiazole, pyrrole, furan, thiophene, oxazole, thiazole, imidazole, pyrazole, isoxazole, 1,2,4-triazole, tetrazole, pyrimidine, pyrazine, pyridazine, oxazoline, thiazoline, tetrahydrofuran, tetrahydropyran, morpholine, piperidine, piperazine, pyrroline, pyrrolidine,
15 oxazolidine, thiazolidine, oxirane or oxetane radical.

A preferred class of compounds of formula (I) are those in which:

R^1 is $-C(=U)NR^3R^4$ or $-C(=V)OR^{3a}$;

20 R^{3a} is (C₃-C₈)cycloalkyl or (C₃-C₈)cycloalkyl-(C₁-C₆)alkyl, which cycloalkyl groups are unsubstituted or substituted by one or more (C₁-C₆)alkyl, (C₁-C₆)haloalkyl or R^6 groups; or is (C₁-C₆)alkyl, (C₃-C₆)alkenyl or (C₃-C₆)alkynyl which last three mentioned groups are substituted by one or more R^{6a} groups; or is (C₁-C₆)alkylamino; or is $NH(CHR^{14})_s$ aryl which aryl group is unsubstituted or substituted by one or more R^6 groups;

25 R^{6a} is (C₁-C₆)alkoxy, (C₁-C₆)haloalkoxy, $S(O)_nR^{14a}$, $CO_2(C_1-C_6)alkyl$, CO_2H , amino, (C₁-C₆)alkylamino, carbamoyl, (C₁-C₆)-alkylcarbamoyl, di-(C₁-C₆)-alkylcarbamoyl or $CH[O(C_1-C_6)alkyl]_2$; or is phenoxy unsubstituted or substituted by one or more R^{14a} or halogen groups;

and the other values are as defined in formula (I).

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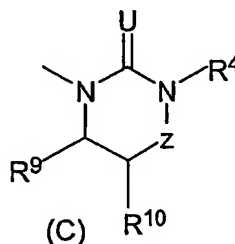
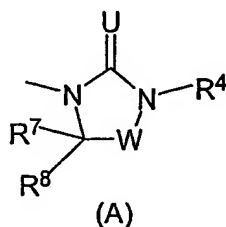
A further preferred class of compounds of formula (I) are those in which:

R^1 is $-C(=U)NR^3R^4$;

R² is H;

R³ is R⁵ or OH; or is (C₁-C₆)alkyl substituted by one or more R⁶ groups;

or R² and R³ together with the interconnecting atoms may form a heterocyclic ring selected from (A) and (C):



R⁴ is H or R⁵, or is (C₁-C₆)alkyl unsubstituted or substituted by one or more R⁶ groups;

or R³ and R⁴ together with the adjacent N atom may form a pyrrolidin-1-yl, piperidin-1-yl, morpholin-1-yl or thiomorpholin-1-yl (or its S-oxide or S, S-dioxide) ring;

R⁵ is (C₃-C₆)alkenyl, (C₃-C₆)alkynyl, (C₃-C₈)cycloalkyl, (C₃-C₈)cycloalkyl-(C₁-C₆)alkyl, (C₁-C₆)alkoxy, (C₃-C₆)alkenyloxy, (C₃-C₆)alkynyloxy or O(CR¹⁵R¹⁶)_p(C₃-C₈)cycloalkyl; or -(CR¹⁵R¹⁶)_pphenyl, -(CR¹⁵R¹⁶)_pheterocyclyl, O(CR¹⁵R¹⁶)_rphenyl or

O(CR¹⁵R¹⁶)_rheterocyclyl, which last four mentioned phenyl or heterocyclyl groups are unsubstituted or substituted by one or more R¹⁷ groups;

R⁶ is halogen, (C₁-C₆)alkoxy, (C₁-C₆)haloalkoxy, S(O)_nR^{14a}, CN, NO₂ or OH;

R¹⁷ is R⁶, R^{14a} or CH₂OH;

U is S or O;

W is (CHR¹⁹)_q or CO;

Z is O;

R⁷, R⁸, R⁹, R¹⁰ and R¹⁹ are each H; or (C₁-C₆)alkyl unsubstituted or substituted by one or more R⁶ groups;

or R⁷ and R⁸ together with the attached carbon atom represent C=O;

R¹⁴, R¹⁵ and R¹⁶ are each H or (C₁-C₆)alkyl;

R^{14a} is (C₁-C₆)alkyl or (C₁-C₆)haloalkyl;

m is zero;

n, r, s, t and u are zero, one or two;

q is one; and wherein heterocyclyl denotes a pyridine, pyrimidine, (1,2,4)-oxadiazole, (1,3,4)-oxadiazole, (1,2,4)-thiadiazole, (1,3,4)-thiadiazole, pyrrole, furan, thiophene, oxazole, thiazole, benzothiazole, imidazole, pyrazole, isoxazole, 1,2,4-triazole, tetrazole, pyrazine, pyridazine, oxazoline, thiazoline, tetrahydrofuran, tetrahydropyran, morpholine, piperidine, piperazine, pyrroline, pyrrolidine, oxazolidine, thiazolidine, oxirane or oxetane radical.

A further preferred class of compounds of formula (I) are those in which:

R^1 is $-C(=U)NR^3R^4$;

10 R^2 is H;

U is O or S;

R^3 is (C₁-C₆)haloalkyl, (C₃-C₆)alkenyl, (C₃-C₆)alkynyl, (C₃-C₈)cycloalkyl, (C₃-C₈)cycloalkyl(C₁-C₆)alkyl, (C₃-C₆)alkenyloxy, (C₃-C₆)alkynyloxy, NH₂, (C₁-C₆)alkylamino, OH, Ophenyl, pyrimidyl, benzothiazolyl, thiazolyl, thiadiazolyl,

15 $-(CH_2)_2$ pyrrolidin-1-yl, NHCO(C₁-C₆)alkyl, NHCO(C₁-C₆)alkyl, NHCOphenyl or N=C(phenyl)₂; or is pyridyl unsubstituted or substituted by one or more groups selected from halogen, (C₁-C₆)alkyl, (C₁-C₆)alkoxy, CN and NO₂; or is OCH₂phenyl which phenyl is unsubstituted or substituted by one or more groups selected from halogen, (C₁-C₆)alkyl, CN and NO₂; or is (C₁-C₆)alkoxy unsubstituted or substituted by a CO₂(C₁-C₆)alkyl group;

20 or is $-(CHR^{15})_p$ phenyl wherein p is 0, 1 or 2, R^{15} is H or (C₁-C₆)alkyl, and phenyl is unsubstituted or substituted by one or more groups selected from halogen, (C₁-C₆)alkyl, (C₁-C₆)haloalkyl, (C₁-C₆)alkoxy, (C₁-C₆)haloalkoxy, CN, NO₂, OH, CH₂OH, CO₂(C₁-C₆)alkyl and phenoxy which phenoxy is unsubstituted or substituted by one or more groups selected from halogen and (C₁-C₆)haloalkyl;

25 or is (C₁-C₆)alkyl unsubstituted or substituted by one or more groups selected from (C₁-C₆)alkoxy, CN, OH, CO₂(C₁-C₆)alkyl and CH[O(C₁-C₆)alkyl]₂;

or is NH(CH₂)_sphenyl wherein s is zero or 1;

30 R^4 is H, (C₁-C₆)alkyl, (C₃-C₆)alkenyl, (C₃-C₆)alkynyl, (C₃-C₈)cycloalkyl, $-(CH_2)_p$ phenyl wherein p is 0 or 1, or N=C[(C₁-C₆)alkyl]₂;

or R^3 and R^4 together with the adjacent N atom may form a pyrrolidin-1-yl, piperidin-1-yl, morpholin-1-yl, thiomorpholin-1-yl which groups are unsubstituted or substituted

by one or more groups selected from halogen, (C₁-C₆)alkyl and OH; or form a 4,5-dihydropyrazol-1-yl ring; and
m is zero.

- 5 A further preferred class of compounds of formula (I) are those in which:

R¹ is -C(=U)NR³R⁴;

U is O;

R² is (C₁-C₆)alkyl, (C₃-C₆)alkenyl, (C₃-C₆)alkynyl or CH₂phenyl; or is (C₁-C₆)alkyl substituted by CO₂(C₁-C₆)alkyl or CH[O(C₁-C₆)alkyl]₂;

- 10 R³ is (C₃-C₆)alkenyloxy, (C₃-C₆)alkynyloxy, CH₂phenyl or OCH₂phenyl; or is (C₁-C₆)alkoxy unsubstituted or substituted by one or two CO₂(C₁-C₆)alkyl groups;

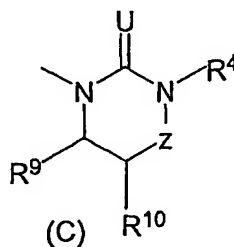
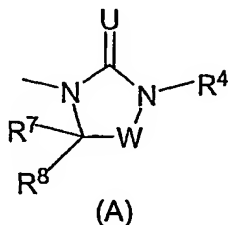
R⁴ is H or (C₁-C₆)alkyl; and

m is zero.

- 15 A further preferred class of compounds of formula (I) are those in which:

R¹ is -C(=U)NR³R⁴;

R² and R³ together with the interconnecting atoms form a heterocyclic ring selected from (A) and (C):



- 20 wherein U is O or S;

and in (A):

W is CH₂, CO or CHR¹⁹ wherein R¹⁹ is H, (C₁-C₆)alkyl or phenyl;

R⁴ is H, (C₁-C₆)alkyl, phenyl, CH₂phenyl or OCH₂phenyl;

R⁷ is H, (C₁-C₆)alkyl, (C₁-C₆)alkoxy or phenyl; and

- 25 R⁸ is H or (C₁-C₆)alkyl;

and in (C):

Z is O;

R⁴ is (C₁-C₆)alkyl, (C₃-C₈)cycloalkyl or CH₂phenyl; and

R^9 and R^{10} are each H; and
m is zero.

A further preferred class of compounds of formula (I) are those in which:

- 5 R^1 is $-C(=U)NR^3R^4$;
wherein U is NR^{18} ;
 R^2 is H;
 R^3 is (C_1-C_6) alkyl, (C_3-C_6) alkenyl, (C_3-C_8) cycloalkyl; or is (C_1-C_6) alkyl substituted by
one or two (C_1-C_6) alkoxy or $CH[O(C_1-C_6)alkyl]_2$ groups;
10 R^4 and R^{18} are each the same or different H or (C_1-C_6) alkyl;
or R^3 and R^4 together with the adjacent N atom form a morpholin-1-yl or pyrazol-1-yl
ring; and
m is zero.

- 15 A further preferred class of compounds of formula (I) are those in which:

- R^1 is $-C(=V)OR^{3a}$;
wherein V is O or S;
 R^2 is H, (C_3-C_8) cycloalkyl- (C_1-C_6) alkyl, $NHCH_2$ phenyl; or is (C_1-C_6) alkyl substituted
by a group selected from (C_1-C_6) alkoxy, CN, OH and $S(O)_nR^{14a}$;
20 R^{3a} is (C_3-C_8) cycloalkyl or (C_3-C_8) cycloalkyl- (C_1-C_6) alkyl, which cycloalkyl groups are
unsubstituted or substituted by one or more R^6 groups; or is (C_1-C_6) alkyl, $(C_3-$
 $C_6)$ alkenyl or (C_3-C_6) alkynyl which last three mentioned groups are substituted by
one or more R^6 groups; or is (C_1-C_6) alkylamino; or is $NH(CHR^{14})_s$ aryl which aryl
group is unsubstituted or substituted by one or more R^6 groups; and
25 m is zero.

A more preferred class of compounds of formula (I) are those in which:

- R^1 is $-C(=U)NR^3R^4$;
 R^2 is H;
30 U is O or S;
 R^3 is (C_1-C_6) alkoxy, C_1-C_6 haloalkoxy, (C_3-C_6) alkenyloxy, (C_3-C_6) alkynyloxy,
 CH_2 phenyl or OCH_2 phenyl, phenyl or 2-pyridyl which last four mentioned phenyl or

pyridyl groups are unsubstituted or substituted by one or more groups selected from halogen, (C₁-C₆)alkyl, (C₁-C₆)alkoxy, CN and NO₂;

R⁴ is H, (C₁-C₆)alkyl, (C₃-C₆)alkenyl, (C₃-C₆)alkynyl or CH₂phenyl; and

m is zero.

5

A further more preferred class of compounds of formula (I) are those in which:

R¹ is -C(=U)NR³R⁴;

R² is H;

U is O;

10 R³ is (C₁-C₆)alkoxy;

R⁴ is (C₁-C₆)alkyl; and

m is zero.

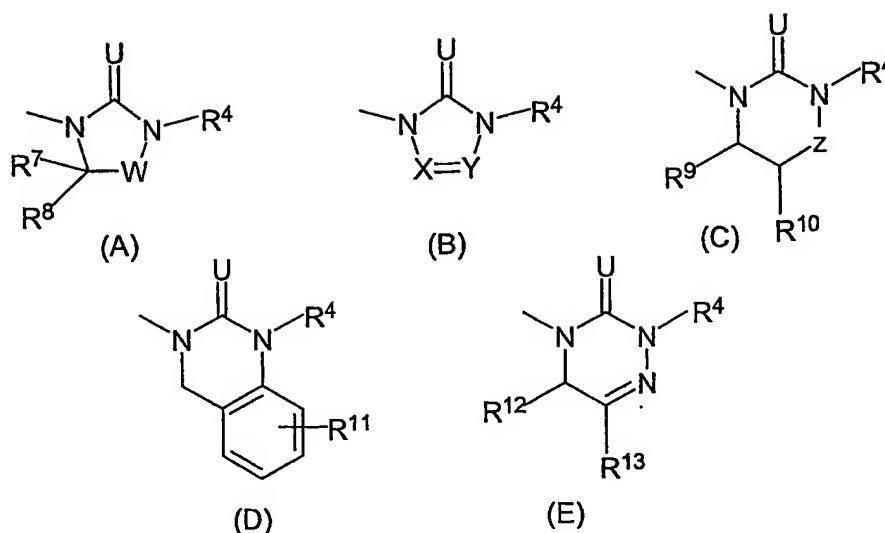
15 The compounds of general formula (I) can be prepared by the application or adaptation of known methods (i.e. methods heretofore used or described in the chemical literature.

In the following description of processes when symbols appearing in formulae are not specifically defined, it is understood that they are "as defined above" in accordance with the first definition of each symbol in the specification.

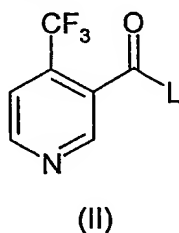
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According to a feature of the invention compounds of formula (I) wherein R¹ is -C(=U)NR³R⁴, m is zero, and R², U, R³ and R⁴ are as defined above; or R² and R³ together with the interconnecting atoms form a heterocyclic ring selected from (A), (B), (C), (D) and (E);

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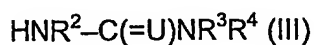


wherein R⁴, R⁷, R⁸, R⁹, R¹⁰, R¹¹, R¹², R¹³, W, X, Y and Z are as defined above, may be prepared by the reaction of a compound of formula (II):



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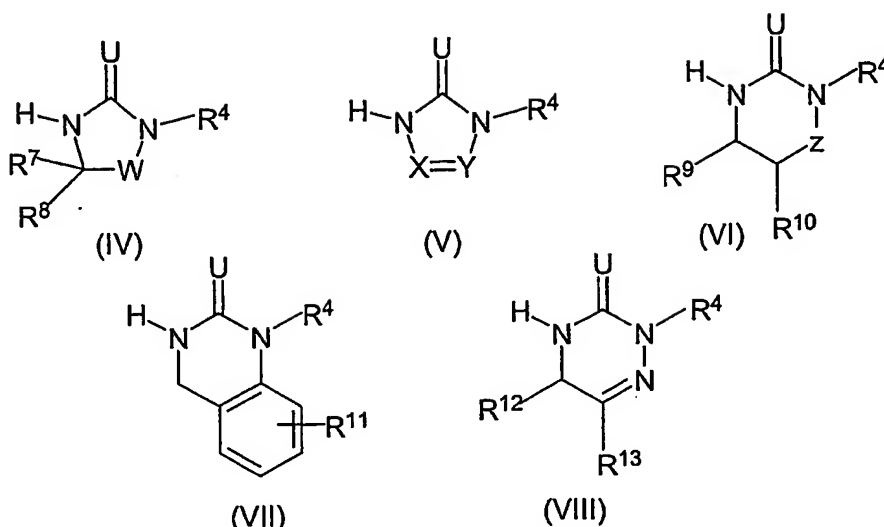
wherein L is a leaving group, generally halogen and preferably chlorine, with a compound of formula (III):



wherein R², U, R³ and R⁴ are as defined above, or with a compound of formula (IV),

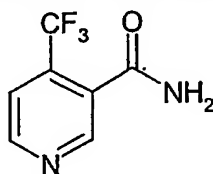
10 (V), (VI); (VII) or (VIII):

17



wherein R⁴, R⁷, R⁸, R⁹, R¹⁰, R¹¹, R¹², R¹³, W, X, Y and Z are as defined above. The reaction is generally performed in the presence of an organic base such as a tertiary amine for example triethylamine, or pyridine, or an inorganic base such as an alkali metal carbonate, for example potassium carbonate, or an alkali metal alkoxide such as sodium ethoxide, or sodium hydride, in a solvent such as dioxan, tetrahydrofuran or N,N-dimethylformamide, at a temperature of from 0° to 100°C (preferably 0° to 50°C).

- 10 According to a further feature of the present invention compounds of formula (I) wherein R¹ is -C(=U)NR³R⁴, m is zero, R² is H, U is O, and R³ and R⁴ are as defined above, may be prepared by the reaction of a compound of formula (IX):



(IX)

- 15 with oxalyl chloride or triphosgene, in an inert solvent such as dichloroethane at a temperature of from 0°C to the reflux temperature of the solvent, followed by removal of the solvent to give the corresponding acylisocyanate intermediate which is generally not isolated, and which is directly reacted with an amine of formula (X):



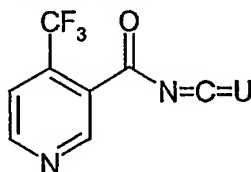
wherein R^3 and R^4 are as defined above. The reaction is generally performed in an inert solvent such as dichloroethane or tetrahydrofuran at a temperature of from 0° to 60°C.

- 5 According to a further feature of the present invention compounds of formula (I) wherein R^1 is $-C(=V)OR^{3a}$, m is zero, R^2 is H, V is O, and R^{3a} is as defined above, may be prepared by the reaction of a compound of formula (IX) as defined above, with oxalyl chloride to give an acylisocyanate intermediate above which is generally not isolated, and which is directly reacted with an alcohol of formula (XI):



wherein R^3 is as defined above. The reaction is generally performed in an inert solvent such as dichloroethane or tetrahydrofuran at a temperature of from 0° to 60°C.

- 15 According to a further feature of the present invention compounds of formula (I) wherein R^1 is $-C(=U)NR^3R^4$, m is zero, R^2 is H, U is O or S, and R^3 and R^4 are as defined above, may be prepared by the reaction of a compound of formula (XII).

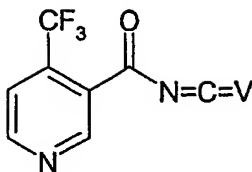


(XII)

- 20 wherein U is O or S, with a compound of formula (X) as defined above. The reaction is generally performed in an inert solvent such as dichloroethane or tetrahydrofuran at a temperature of from 0° to 60°C.

- 25 According to a further feature of the present invention compounds of formula (I) wherein R^1 is $-C(=V)OR^{3a}$, m is zero, R^2 is H, V is O or S, and R^{3a} is as defined above, may be prepared by the reaction of a compound of formula (XIII).

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(XIII)

wherein V is O or S, with a compound of formula (XI) as defined above. The reaction is generally performed in an inert solvent such as dichloroethane or tetrahydrofuran at a temperature of from 0° to 60°C.

According to a further feature of the present invention compounds of formula (I) wherein R¹ is -C(=U)NR³R⁴, m is zero, R² is H, R⁴ is H, U is O or S, and R³ is as defined above, may be prepared by the reaction of a compound of formula (IX) as defined above, with a strong base such as sodium hydride to form the corresponding salt, which is then reacted with a compound of formula (XIV):

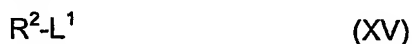


wherein R³ is as defined above. The reaction is generally performed in an inert solvent such as N,N-dimethylformamide at a temperature of from 0° to 60°C.

According to a further feature of the present invention compounds of formula (I) wherein R¹ is -C(=U)NR³R⁴ or -C(=V)OR^{3a}, m is zero, R² is H, U and V are each S, and R³, R^{3a} and R⁴ are as defined above, may be prepared in a 1-pot process by the reaction of 4-trifluoromethylnicotinic acid with a suitable halogenating agent, preferably oxalyl chloride, in a solvent such as dichloroethane, optionally in the presence of N,N-dimethylformamide, at a temperature of from 0°C to the reflux temperature of the solvent, to give the corresponding acid chloride, followed by removal of the solvent, and reaction with an alkali metal thiocyanate or ammonium thiocyanate or a tetraalkylammonium thiocyanate for example tetrabutylammonium thiocyanate, generally in the presence of a base, such as an alkali metal carbonate for example potassium carbonate, in an inert solvent such as toluene or acetone, at a temperature of from 0° to 60°C, to give 4-trifluoromethyl-3-pyridylcarbonyl isothiocyanate, followed by reaction with an amine of formula (X) above or an alcohol of formula (XI) above, at a temperature of from 0° to 60°C.

According to a further feature of the invention compounds of formula (I) wherein R^1 is $-C(=U)NR^3R^4$, m is zero, U , R^3 and R^4 are as defined above, and R^2 is (C_1-C_6) alkyl, (C_3-C_6) alkenyl, (C_3-C_6) alkynyl, (C_3-C_8) cycloalkyl or (C_3-C_8) cycloalkyl- (C_1-C_6) alkyl which groups are unsubstituted or substituted by one or more R^6 groups; or is

5 $-(CR^{15}R^{16})_p$ aryl or $-(CR^{15}R^{16})_p$ heterocyclyl, which aryl or heterocyclyl groups are optionally substituted by R^{17} ; wherein R^6 , R^{15} , R^{16} and R^{17} are as defined above, may be prepared by the reaction of the corresponding compound of formula (I) wherein R^2 is H, using an alkylating agent of formula (XV):



10 wherein L^1 is a leaving group generally halogen and preferably chlorine. The reaction is generally performed in the presence of an organic base such as a tertiary amine for example triethylamine, or pyridine, or an inorganic base such as an alkali metal carbonate, for example potassium carbonate, or an alkali metal alkoxide such as sodium ethoxide, or sodium hydride, in a solvent such as dioxan, tetrahydrofuran or

15 N,N-dimethylformamide, at a temperature of from 0° to 100°C (preferably 0° to 50°C).

According to a further feature of the invention compounds of formula (I) wherein R^1 , and R^2 are as defined above, and m is 1 may be prepared by oxidising a

20 corresponding compound in which m is 0. The oxidation is generally performed using hydrogen peroxide in a solvent such as acetic acid, or a peracid such as 3-chloroperbenzoic acid in a solvent such as dichloromethane or 1,2-dichloroethane, at a temperature of from 0°C to the reflux temperature of the solvent.

25 Intermediates of formula (II) wherein L is chlorine, may be prepared according to known procedures, for example by the reaction of the corresponding carboxylic acid of formula (II) wherein L is replaced by OH, with a suitable halogenating agent, preferably oxalyl chloride or thionyl chloride, in a solvent such as dichloroethane, optionally in the presence of N,N-dimethylformamide, at a temperature of from 0°C to

30 the reflux temperature of the solvent.

Intermediates of formula (XII) wherein U is S, and (XIII) wherein V is O, may be prepared according to known procedures, for example by the reaction of a compound of formula (II) as defined above, with an alkali metal thiocyanate or ammonium thiocyanate or a tetraalkylammonium thiocyanate for example

- 5 tetrabutylammonium thiocyanate, generally in the presence of a base such as an alkali metal carbonate for example potassium carbonate, in an inert solvent solvent such as toluene or acetone, at a temperature of from 0° to 100°C.

- 10 Intermediate of formula (XII) wherein U is O, may be prepared according to known procedures, for example by the reaction of a compound of formula (II) as defined above, with an alkali metal cyanate or ammonium cyanate or a tetraalkylammonium cyanate for example tetrabutylammonium cyanate, generally in the presence of a base such as an alkali metal carbonate for example potassium carbonate, in an inert solvent solvent such as toluene, at a temperature of from 0° to 100°C.

- 15 Collections of compounds of the formula (I) which can be synthesized by the above mentioned process may also be prepared in a parallel manner, and this may be effected manually or in a semiautomated or fully automated manner. In this case, it is possible, for example, to automate the procedure of the reaction, work-up or
- 20 purification of the products or of the intermediates. In total, this is to be understood as meaning a procedure as is described, for example, by S.H. DeWitt in "Annual Reports in Combinatorial Chemistry and Molecular Diversity: Automated Synthesis", Volume 1, Verlag Escom 1997, pages 69 to 77.

- 25 A series of commercially available apparatuses as are offered by, for example, Stem Corporation, Woodrolfe Road, Tollesbury, Essex, CM9 8SE, England or H+P Labortechnik GmbH, Bruckmannring 28, 85764 Oberschleißheim, Germany or Radleys, Shirehill, Saffron Walden, Essex, England, may be used for the parallel procedure of the reaction and work-up. For the parallel purification of compounds of
- 30 the formula (I), or of intermediates obtained during the preparation, use may be made, inter alia, of chromatography apparatuses, for example those by ISCO, Inc., 4700 Superior Street, Lincoln, NE 68504, USA.

The apparatuses mentioned lead to a modular procedure in which the individual process steps are automated, but manual operations must be performed between the process steps. This can be prevented by employing semi-integrated or fully integrated automation systems where the automation modules in question are operated by, for example, robots. Such automation systems can be obtained, for example, from Zymark Corporation, Zymark Center, Hopkinton, MA 01748, USA.

In addition to what has been described here, compounds of the formula (I) may be prepared in part or fully by solid-phase-supported methods. For this purpose, individual intermediate steps or all intermediate steps of the synthesis or of a synthesis adapted to suit the procedure in question are bound to a synthetic resin. Solid-phase-supported synthesis methods are described extensively in the specialist literature, for example Barry A. Bunin in "The Combinatorial Index", Academic Press, 1998.

The use of solid-phase-supported synthesis methods permits a series of protocols which are known from the literature and which, in turn, can be performed manually or in an automated manner. For example, the "tea-bag method" (Houghten, US 4,631,211; Houghten et al., Proc. Natl. Acad. Sci, 1985, 82, 5131-5135), in which products by IRORI, 11149 North Torrey Pines Road, La Jolla, CA 92037, USA, are employed, may be semiautomated. The automation of solid-phase-supported parallel syntheses is performed successfully, for example, by apparatuses by Argonaut Technologies, Inc., 887 Industrial Road, San Carlos, CA 94070, USA or MultiSynTech GmbH, Wullener Feld 4, 58454 Witten, Germany.

The preparation of the processes described herein yields compounds of the formula (I) in the form of substance collections which are termed libraries. The present invention also relates to libraries which comprise at least two compounds of the formula (I).

Compounds of formula (II), (III), (IV), (V), (VI), (VII), (VIII), (IX), (X), (XI), (XIV) and (XV) are known or may be prepared by known methods.

The following non-limiting Examples illustrate the preparation of the compounds of formula (I).

Chemical Examples

5 NMR spectra were run in deuteriochloroform unless stated otherwise.

In the Examples which follow, quantities (also percentages) are weight-based, unless stated otherwise.

Example 1

10 Oxalyl chloride (0.15ml) was added to a suspension of 4-trifluoromethyl-3-pyridinecarboxamide (0.25g) in 1,2-dichloroethane at 20°C and then heated to reflux for 2 hours. The mixture was cooled, evaporated and the residue containing 4-trifluoromethyl-3-pyridylcarbonyl isocyanate was dissolved in tetrahydrofuran. Benzylamine (0.15ml) was added and the mixture stirred at 20°C for 2 hours and
15 evaporated. The residue was purified by silica-gel column chromatography, eluting with n-hexane/ethyl acetate (3:2), to give 1-benzyl-3-(4-trifluoromethyl-3-pyridylcarbonyl)urea (0.30g, Compound A-37).

By proceeding in a similar manner there was prepared 1-benzyl-1-(2-hydroxyethyl)-
20 3-(4-trifluoromethyl-3-pyridylcarbonyl)urea (Compound A-862).

Example 2

Oxalyl chloride (1.50ml) was added to a suspension of 4-trifluoromethyl-3-pyridinecarboxamide (2.0g) in 1,2-dichloroethane at 20°C, and stirred under reflux
25 for 2 hours. The mixture was evaporated and dichloromethane added to the residue containing 4-trifluoromethyl-3-pyridylcarbonyl isocyanate. To this was added at 20°C a suspension of N,O-dimethylhydroxylamine hydrochloride(2.05g) and triethylamine (3.0ml) in dichloromethane, which had been prepared in advance. The mixture was stirred for 30 minutes, then water added and the organic layer dried (magnesium
30 sulfate) and evaporated, to give after trituration with ethanol, 1-methyl-1-methoxy-3-(4-trifluoromethyl-3-pyridylcarbonyl)urea (2.2g) (Compound A-313).

By proceeding in a similar manner there was prepared 1-hydroxyl-1-isopropyl-3-(4-trifluoromethyl-3-pyridylcarbonyl)urea (Compound A-540).

Example 3

- 5 Sodium hydride (0.090g, 60% dispersion in mineral oil) was added to a solution of 4-trifluoromethyl-3-pyridinecarboxamide (0.40g) in N,N-dimethylformamide at 20°C, and stirred for 1 hour. Benzyl isocyanate (0.31 ml) was added and the mixture stirred at 20°C for 2 hours, then methyl bromoacetate (0.30 ml) added and stirring continued for 5 hours. Ethyl acetate and water were added to the solution and the
10 organic phase dried (magnesium sulfate), evaporated and the residue purified by column chromatography on silica gel, eluting with n-hexane/ethyl acetate (2:1), to give 3-benzyl-1-(4-trifluoromethyl-3-pyridylcarbonyl)hydantoin (0.50g, Compound S-132).

15 Example 4

- Methanesulfonyl chloride (0.17ml) was added to an ice-cooled mixture of 1-benzyl-1-(2-hydroxyethyl)-3-(4-trifluoromethyl-3-pyridylcarbonyl)urea (0.70g), and triethylamine (0.64ml) in dichloromethane, then stirred for 3 hours at 20°C. The mixture was washed (water), dried (magnesium sulfate), evaporated and the residue
20 purified by silica-gel chromatography, eluting with n-hexane/ethyl acetate (3:2), to give 1-benzyl-3-(4-trifluoromethyl-3-pyridylcarbonyl)-2-imidazolidinone (0.63g, Compound S-15).

Example 5

- 25 1,2-Dibromoethane (0.06ml) was added to a suspension of 1-hydroxyl-1-isopropyl-3-(4-trifluoromethyl-3-pyridylcarbonyl)urea (0.20g) and potassium carbonate (0.20g) in N,N-dimethylformamide at 20°C, and stirred for 3 hours. Ethyl acetate and water were added and the organic phase dried (magnesium sulfate), evaporated and the residue purified by column chromatography on silica gel, eluting with n-hexane/ethyl
30 acetate (2:1), to give 2-isopropyl-4-(4-trifluoromethyl-3-pyridylcarbonyl)-perhydro-1,2,4-oxadiazin-3-one (0.25g, Compound U-3).

Example 6

Oxalyl chloride (3.2 ml, 2M) was added to a suspension of 4-trifluoromethylnicotinic acid (1g) and a catalytic amount of N,N-dimethylformamide in dichloromethane, and stirred at 20°C for 1 hour. After evaporation, the residue was dissolved in acetone
5 and potassium thiocyanate (1g) added with ice bath cooling to give 4-trifluoromethyl-3-pyridylcarbonyl isothiocyanate, then N-methylaniline (0.65g) was added and the mixture stirred at 20°C for 1 hour. Ethyl acetate was added and the mixture washed with water, dried (magnesium sulfate), evaporated and the residue purified by silica-gel chromatography, eluting with n-hexane/ethyl acetate = 2/1, to give 1-methyl-1-phenyl-3-(4-trifluoromethyl-3-pyridylcarbonyl)thiourea (0.96g, Compound B-349).
10

Example 7

Oxalyl chloride (6.4ml, 2M) was added to a suspension of 4-trifluoromethylnicotinic acid (2g) and a catalytic amount of N,N-dimethylformamide in dichloromethane, and
15 stirred at 20°C for 1 hour to give a solution of 4-trifluoromethylnicotinic acid chloride. N, N-Ethylenethiourea (2.23g) was added to sodium hydride (0.82g, 60% dispersion in mineral oil) in tetrahydrofuran, and the mixture was stirred at 20°C for 1 hour, and then added to the above solution of 4-trifluoromethylnicotinic acid chloride with ice bath cooling, then stirred at 20°C for 1 hour. Ethyl acetate was added and the
20 mixture washed with water, dried (magnesium sulfate), evaporated and the residue crystallized (ethanol) to give N-(4-trifluoromethyl-3-pyridylcarbonyl)-imidazolin-2-thione (1.35 g, Compound S-356).

Example 8

Oxalyl chloride (9.6 ml, 2M) was added to a suspension 4-trifluoromethylnicotinic acid (3g) and a catalytic amount of N, N-dimethylformamide in dichloromethane, and
25 stirred at 20°C for 1 hour. The mixture was evaporated, the residue dissolved in toluene and tetrabutylammonium thiocyanate (3g) and potassium carbonate (1.5g) added, then stirred at 20°C for 30 minutes to give 4-trifluoromethyl-3-pyridylcarbonyl isothiocyanate 2,2,2-trifluoroethanol (3.15g) was then added, and the mixture stirred
30 at 20°C for 1 hour. Ethyl acetate was added and the mixture washed with water, hydrochloric acid 1(M), saturated sodium bicarbonate and brine, dried (magnesium

sulfate), evaporated and recrystallised from ethanol to give 2,2,2-trifluoroethyl N-(4-trifluoromethyl-3-pyridylcarbonyl) thiocarbamate (1.2g, Compound X-45).

Example 9

- 5 Allyl bromide (0.10ml) was added to a suspension of 1-methyl-1-methoxy-3-(4-trifluoromethyl-3-pyridylcarbonyl)urea (0.25g) and potassium carbonate (0.16g) in N,N-dimethylformamide at 20°C, and stirred for 2 hours. Ethyl acetate and water were added and the organic phase dried (magnesium sulfate), evaporated and the residue purified by column chromatography on silica gel, eluting with n-hexane/ethyl
10 acetate (2:1) to give 1-methyl-1-methoxy-3-allyl-3-(4-trifluoromethyl-3-pyridylcarbonyl)urea (0.26g, Compound E-85).

- The following preferred compounds shown in Tables 1 to 9 also form part of the present invention, and were or may be prepared in accordance with, or analogously
15 to, the above-mentioned Examples 1 to 9 or the above-described general methods. In the Tables Ph means phenyl. Where subscripts are omitted after atoms it will be understood that they are intended, for example CH₃ means CH₃.

Compound numbers are given for reference purposes only.

20 Table I

Compounds of formula (I) in which R¹ is -C(=U)NR³R⁴; R² is H and m is zero. In Table 1 compounds A-1 to A-881 represent individual compounds in which U is O, whilst compounds B-1 to B-881 represent individual compounds in which U is S.

Compound		R ³	R ⁴
A-1	B-1	CH ₃ CH=CH	H
A-2	B-2	CH ₂ =CHCH ₂	H
A-3	B-3	CH ₃ (CH ₃)C=CH	H
A-4	B-4	(CH ₃) ₂ C=CH	H
A-5	B-5	CH ₃ CH=CHCH ₂	H
A-6	B-6	CH ₂ =C(CH ₃)CH ₂	H
A-7	B-7	CH ₃ CH=C(Cl)CH ₂	H
A-8	B-8	CH ₂ =CHCH ₂ CH ₂	H
A-9	B-9	CH ₃ CH ₂ (CH ₃)C=CH	H
A-10	B-10	(CH ₃) ₂ CHCH=CH	H

Compound		R ³	R ⁴
A-11	B-11	CH ₂ CH ₂ CH=CHCH ₂	H
A-12	B-12	CH ₃ CH=C(CH ₃)CH ₂	H
A-13	B-13	CH(CH ₃)HC=CHCH ₃	H
A-14	B-14	CH ₂ HC=C(CH ₃) ₂	H
A-15	B-15	CH ₃ CH=CHCH ₂ CH ₂	H
A-16	B-16	CH ₂ =CH ₂ CH ₂ CH ₂ CH ₂	H
A-17	B-17	CH ₂ =CH ₂ CH ₂ CH ₂ CHCH ₂	H
A-18	B-18	CHCCH ₂	H
A-19	B-19	CH ₃ CCCH ₂	H
A-20	B-20	CHCCH(CH ₃)	H
A-21	B-21	CH ₃ CCCH(CH ₃)	H
A-22	B-22	CHCC(CH ₃) ₂	H
A-23	B-23	CH ₃ CCC(CH ₃) ₂	H
A-24	B-24	cyclo-C ₃ H ₅	H
A-25	B-25	cyclo-C ₃ H ₄ (1-CH ₃)	H
A-26	B-26	cyclo-C ₄ H ₇	H
A-27	B-27	cyclo-C ₄ H ₆ (1-CH ₃)	H
A-28	B-28	cyclo-C ₅ H ₉	H
A-29	B-29	cyclo-C ₅ H ₈ (1-CH ₃)	H
A-30	B-30	cyclo-C ₆ H ₁₁	H
A-31	B-31	cyclo-C ₆ H ₁₀ (1-CH ₃)	H
A-32	B-32	(cyclo-C ₃ H ₅)CH ₂	H
A-33	B-33	(cyclo-C ₃ H ₄ (1-CH ₃))CH ₂	H
A-34	B-34	(cyclo-C ₄ H ₇)CH ₂	H
A-35	B-35	(cyclo-C ₅ H ₉)CH ₂	H
A-36	B-36	(cyclo-C ₆ H ₁₁)CH ₂	H
A-37	B-37	PhCH ₂	H
A-38	B-38	PhCH(CH ₃)	H
A-39	B-39	PhCH ₂ CH ₂	H
A-40	B-40	PhC(CH ₃) ₂	H
A-41	B-41	PhCH ₂ CH ₂	H
A-42	B-42	(2-F-Ph)CH ₂	H
A-43	B-43	(3-F-Ph)CH ₂	H
A-44	B-44	(4-F-Ph)CH ₂	H
A-45	B-45	(2-Cl-Ph)CH ₂	H
A-46	B-46	(3-Cl-Ph)CH ₂	H
A-47	B-47	(4-Cl-Ph)CH ₂	H
A-48	B-48	(2-Br-Ph)CH ₂	H
A-49	B-49	(3-Br-Ph)CH ₂	H
A-50	B-50	(4-Br-Ph)CH ₂	H
A-51	B-51	(2-I-Ph)CH ₂	H
A-52	B-52	(3-I-Ph)CH ₂	H
A-53	B-53	(4-I-Ph)CH ₂	H

Compound		R ³	R ⁴
A-54	B-54	(2-CF ₃ -Ph)CH ₂	H
A-55	B-55	(3-CF ₃ -Ph)CH ₂	H
A-56	B-56	(4-CF ₃ -Ph)CH ₂	H
A-57	B-57	(2-CH ₃ -Ph)CH ₂	H
A-58	B-58	(3-CH ₃ -Ph)CH ₂	H
A-59	B-59	(4-CH ₃ -Ph)CH ₂	H
A-60	B-60	(2-CH ₃ O-Ph)CH ₂	H
A-61	B-61	(3-CH ₃ O-Ph)CH ₂	H
A-62	B-62	(4-CH ₃ O-Ph)CH ₂	H
A-63	B-63	HO	H
A-64	B-64	CH ₃ O	H
A-65	B-65	CH ₃ CH ₂ O	H
A-66	B-66	n-C ₃ H ₇ O	H
A-67	B-67	iso-C ₃ H ₇ O	H
A-68	B-68	n-C ₄ H ₉ O	H
A-69	B-69	sec-C ₄ H ₉ O	H
A-70	B-70	iso-C ₄ H ₉ O	H
A-71	B-71	tert-C ₄ H ₉ O	H
A-72	B-72	n-C ₅ H ₁₁ O	H
A-73	B-73	n-C ₆ H ₁₃ O	H
A-74	B-74	CH ₂ =CHCH ₂ O	H
A-75	B-75	CH ₂ =C(CH ₃)CH ₂ O	H
A-76	B-76	CH ₂ =CHCH(CH ₃)O	H
A-77	B-77	CH ₂ =C(Cl)CH ₂ O	H
A-78	B-78	CH ₂ =CHC(CH ₃) ₂ O	H
A-79	B-79	CH ₃ CH=CHCH ₂ O	H
A-80	B-80	CH ₂ =CH ₂ CH ₂ CH ₂ O	H
A-81	B-81	CHCCH ₂ O	H
A-82	B-82	CH ₃ CCCH ₂ O	H
A-83	B-83	CHCCH(CH ₃)O	H
A-84	B-84	CHCC(CH ₃) ₂ O	H
A-85	B-85	CH ₃ CH ₂ O ₂ CCH ₂ O	H
A-86	B-86	PhCH ₂ O	H
A-87	B-87	2-CH ₃ O-PhCH ₂ O	H
A-88	B-88	3-CH ₃ O-PhCH ₂ O	H
A-89	B-89	4-CH ₃ O-PhCH ₂ O	H
A-90	B-90	PhO	H
A-91	B-91	2-Cl-PhO	H
A-92	B-92	3-Cl-PhO	H
A-93	B-93	4-Cl-PhO	H
A-94	B-94	2-CF ₃ -PhO	H
A-95	B-95	3-CF ₃ -PhO	H
A-96	B-96	4-CF ₃ -PhO	H

Compound		R ³	R ⁴
A-97	B-97	2-CH ₃ O-PhO	H
A-98	B-98	3-CH ₃ O-PhO	H
A-99	B-99	4-CH ₃ O-PhO	H
A-100	B-100	NH ₂	H
A-101	B-101	CH ₃ NH	H
A-102	B-102	C ₂ H ₅ NH	H
A-103	B-103	n-C ₃ H ₇ NH	H
A-104	B-104	iso-C ₃ H ₇ NH	H
A-105	B-105	n-C ₄ H ₉ NH	H
A-106	B-106	n-C ₅ H ₁₁ NH	H
A-107	B-107	n-C ₆ H ₁₃ NH	H
A-108	B-108	PhCH ₂ NH	H
A-109	B-109	PhNH	H
A-110	B-110	2-F-PhNH	H
A-111	B-111	3-F-PhNH	H
A-112	B-112	4-F-PhNH	H
A-113	B-113	2-Cl-PhNH	H
A-114	B-114	3-Cl-PhNH	H
A-115	B-115	4-Cl-PhNH	H
A-116	B-116	2-Br-PhNH	H
A-117	B-117	3-Br-PhNH	H
A-118	B-118	4-Br-PhNH	H
A-119	B-119	2-I-PhNH	H
A-120	B-120	3-I-PhNH	H
A-121	B-121	4-I-PhNH	H
A-122	B-122	2-CF ₃ -PhNH	H
A-123	B-123	3-CF ₃ -PhNH	H
A-124	B-124	4-CF ₃ -PhNH	H
A-125	B-125	2-CH ₃ -PhNH	H
A-126	B-126	3-CH ₃ -PhNH	H
A-127	B-127	4-CH ₃ -PhNH	H
A-128	B-128	2-CH ₃ O-PhNH	H
A-129	B-129	3-CH ₃ O-PhNH	H
A-130	B-130	4-CH ₃ O-PhNH	H
A-131	B-131	2-NO ₂ -PhNH	H
A-132	B-132	3-NO ₂ -PhNH	H
A-133	B-133	4-NO ₂ -PhNH	H
A-134	B-134	2-CN-PhNH	H
A-135	B-135	3-CN-PhNH	H
A-136	B-136	4-CN-PhNH	H
A-137	B-137	Ph(Me)N	H
A-138	B-138	2-F-Ph(Me)N	H
A-139	B-139	3-F-Ph(Me)N	H

Compound		R ³	R ⁴
A-140	B-140	4-F-Ph(Me)N	H
A-141	B-141	2-Cl-Ph(Me)N	H
A-142	B-142	3-Cl-Ph(Me)N	H
A-143	B-143	4-Cl-Ph(Me)N	H
A-144	B-144	3-CF ₃ -Ph(Me)N	H
A-145	B-145	4-CF ₃ -Ph(Me)N	H
A-146	B-146	2-CH ₃ O-Ph(Me)N	H
A-147	B-147	3-CH ₃ O-Ph(Me)N	H
A-148	B-148	4-CH ₃ O-Ph(Me)N	H
A-149	B-149	Ph	H
A-150	B-150	2-F-Ph	H
A-151	B-151	3-F-Ph	H
A-152	B-152	4-F-Ph	H
A-153	B-153	2-Cl-Ph	H
A-154	B-154	3-Cl-Ph	H
A-155	B-155	4-Cl-Ph	H
A-156	B-156	2-Br-Ph	H
A-157	B-157	3-Br-Ph	H
A-158	B-158	4-Br-Ph	H
A-159	B-159	2-I-Ph	H
A-160	B-160	3-I-Ph	H
A-161	B-161	4-I-Ph	H
A-162	B-162	2-CF ₃ -Ph	H
A-163	B-163	3-CF ₃ -Ph	H
A-164	B-164	4-CF ₃ -Ph	H
A-165	B-165	2-CH ₃ -Ph	H
A-166	B-166	3-CH ₃ -Ph	H
A-167	B-167	4-CH ₃ -Ph	H
A-168	B-168	2-CH ₃ O-Ph	H
A-169	B-169	3-CH ₃ O-Ph	H
A-170	B-170	4-CH ₃ O-Ph	H
A-171	B-171	2-NO ₂ -Ph	H
A-172	B-172	3-NO ₂ -Ph	H
A-173	B-173	4-NO ₂ -Ph	H
A-174	B-174	2-CN-Ph	H
A-175	B-175	3-CN-Ph	H
A-176	B-176	4-CN-Ph	H
A-177	B-177	2-CO ₂ H-Ph	H
A-178	B-178	3-CO ₂ H-Ph	H
A-179	B-179	4-CO ₂ H-Ph	H
A-180	B-180	2-CO ₂ Me-Ph	H
A-181	B-181	3-CO ₂ Me-Ph	H
A-182	B-182	4-CO ₂ Me-Ph	H

Compound		R ³	R ⁴
A-183	B-183	2-HO-Ph	H
A-184	B-184	3-HO-Ph	H
A-185	B-185	4-HO-Ph	H
A-186	B-186	2-NH ₂ -Ph	H
A-187	B-187	3-NH ₂ -Ph	H
A-188	B-188	4-NH ₂ -Ph	H
A-189	B-189	2-HOCH ₂ -Ph	H
A-190	B-190	3-HOCH ₂ -Ph	H
A-191	B-191	4-HOCH ₂ -Ph	H
A-192	B-192	2-CF ₃ O-Ph	H
A-193	B-193	3-CF ₃ O-Ph	H
A-194	B-194	4-CF ₃ O-Ph	H
A-195	B-195	2-CF ₃ CH ₂ O-Ph	H
A-196	B-196	3-CF ₃ CH ₂ O-Ph	H
A-197	B-197	4-CF ₃ CH ₂ O-Ph	H
A-198	B-198	2-(4-Cl-PhO)-Ph	H
A-199	B-199	3-(4-Cl-PhO)-Ph	H
A-200	B-200	4-(4-Cl-PhO)-Ph	H
A-201	B-201	2-(4-CF ₃ -PhO)-Ph	H
A-202	B-202	3-(4-CF ₃ -PhO)-Ph	H
A-203	B-203	4-(4-CF ₃ -PhO)-Ph	H
A-204	B-204	2,3-diCl-Ph	H
A-205	B-205	2,5-diCl-Ph	H
A-206	B-206	2,6-diCl-Ph	H
A-207	B-207	3,4-diCl-Ph	H
A-208	B-208	3,5-diCl-Ph	H
A-209	B-209	2-Pyridyl	H
A-210	B-210	3-Pyridyl	H
A-211	B-211	4-Pyridyl	H
A-212	B-212	2-Pyrimidyl	H
A-213	B-213	1-Pyrrolyl	H
A-214	B-214	1-Pyrazolyl	H
A-215	B-215	3-Pyrazolyl	H
A-216	B-216	1,2,4-Triazol-1-yl	H
A-217	B-217	1,2,4-Triazol-3-yl	H
A-218	B-218	2-Furanyl	H
A-219	B-219	3-Furanyl	H
A-220	B-220	2-Thienyl	H
A-221	B-221	3-Thienyl	H
A-222	B-222	2-Thiazolyl	H
A-223	B-223	1,3,4-Thiadiazol-2-yl	H
A-224	B-224	3-Isioxazolyl	H
A-225	B-225	CH ₃ CO	H

Compound		R ³	R ⁴
A-226	B-226	CH ₃ CH ₂ CO	H
A-227	B-227	n-C ₃ H ₇ CO	H
A-228	B-228	iso-C ₃ H ₇ CO	H
A-229	B-229	n-C ₄ H ₉ CO	H
A-230	B-230	iso-C ₄ H ₉ CO	H
A-231	B-231	sec-C ₄ H ₉ CO	H
A-232	B-232	tert-C ₄ H ₉ CO	H
A-233	B-233	n-C ₅ H ₁₁ CO	H
A-234	B-234	n-C ₆ H ₁₃ CO	H
A-235	B-235	PhCO	H
A-236	B-236	PhCH ₂ CO	H
A-237	B-237	CH ₃ SO ₂	H
A-238	B-238	C ₂ H ₅ SO ₂	H
A-239	B-239	n-C ₃ H ₇ SO ₂	H
A-240	B-240	iso-C ₃ H ₇ SO ₂	H
A-241	B-241	PhCH ₂ SO ₂	H
A-242	B-242	PhSO ₂	H
A-243	B-243	2-Cl-PhSO ₂	H
A-244	B-244	3-Cl-PhSO ₂	H
A-245	B-245	4-Cl-PhSO ₂	H
A-246	B-246	CH ₃ SO ₂ NH	H
A-247	B-247	PhSO ₂ NH	H
A-248	B-248	CF ₃ CH ₂	H
A-249	B-249	ClCH ₂ CH ₂	H
A-250	B-250	ClCH ₂ CH ₂ CH ₂	H
A-251	B-251	CH ₃ OCH ₂ CH ₂	H
A-252	B-252	CH ₃ CH ₂ OCH ₂ CH ₂	H
A-253	B-253	CH ₃ OCH ₂ CH ₂ CH ₂	H
A-254	B-254	C ₂ H ₅ OCH ₂ CH ₂ CH ₂	H
A-255	B-255	n-C ₄ H ₉ OCH ₂ CH ₂ CH ₂	H
A-256	B-256	(CH ₃ O) ₂ CHCH ₂	H
A-257	B-257	CH ₃ CONH	H
A-258	B-258	PhCONH	H
A-259	B-259	Ph ₂ C=N	H
A-260	B-260	HOCH ₂ CH ₂	H
A-261	B-261	HOCH ₂ CH ₂ CH ₂	H
A-262	B-262	CH ₃ O ₂ CCH ₂	H
A-263	B-263	CH ₃ O ₂ CCH(CH ₃)	H
A-264	B-264	CH ₃ O ₂ CC(CH ₃) ₂	H
A-265	B-265	NCCH ₂	H
A-266	B-266	NCCH(CH ₃)	H
A-267	B-267	NCC(CH ₃) ₂	H
A-268	B-268	NC(CH ₃)(iso-C ₃ H ₇)C	H

Compound		R ³	R ⁴
A-269	B-269	HOCH ₂ CH ₂ CH ₂ CH ₂	H
A-270	B-270	CHCCH ₂ O	H
A-271	B-271	CH ₃ O ₂ CCH ₂ O	H
A-272	B-272	CH ₃ O ₂ CCH(CH ₃)O	H
A-273	B-273	CH ₃ O ₂ CC(CH ₃) ₂ O	H
A-274	B-274	(1-pyrrolidinyl)CH ₂ CH ₂	H
A-275	B-275	CH ₂ =CHCH ₂	CH ₃
A-276	B-276	CH ₃ CH=CHCH ₂	CH ₃
A-277	B-277	CH ₂ =C(CH ₃)CH ₂	CH ₃
A-278	B-278	CH ₂ =CH(CH ₃)CH	CH ₃
A-279	B-279	CH ₂ =CHCH ₂ CH ₂	CH ₃
A-280	B-280	CH ₃ CH=C(CH ₃)CH ₂	CH ₃
A-281	B-281	CH(CH ₃)HC=CHCH ₃	CH ₃
A-282	B-282	C(CH ₃) ₂ HC=CH ₂	CH ₃
A-283	B-283	CH ₂ HC=C(CH ₃) ₂	CH ₃
A-284	B-284	CH ₃ CH=CHCH ₂ CH ₂	CH ₃
A-285	B-285	CH ₂ =CHCH ₂ CH ₂ CH ₂	CH ₃
A-286	B-286	CHCCH ₂	CH ₃
A-287	B-287	CH ₃ CCCH ₂	CH ₃
A-288	B-288	CHCCH(CH ₃)	CH ₃
A-289	B-289	CH ₃ CCCH(CH ₃)	CH ₃
A-290	B-290	cyclo-C ₃ H ₅	CH ₃
A-291	B-291	cyclo-C ₅ H ₉	CH ₃
A-292	B-292	cyclo-C ₆ H ₁₁	CH ₃
A-293	B-293	(cyclo-C ₃ H ₅)CH ₂	CH ₃
A-294	B-294	(cyclo-C ₅ H ₉)CH ₂	CH ₃
A-295	B-295	(cyclo-C ₆ H ₁₁)CH ₂	CH ₃
A-296	B-296	PhCH ₂	CH ₃
A-297	B-297	PhCH(CH ₃)	CH ₃
A-298	B-298	PhC(CH ₃) ₂	CH ₃
A-299	B-299	PhCH ₂ CH ₂	CH ₃
A-300	B-300	(2-F-Ph)CH ₂	CH ₃
A-301	B-301	(3-F-Ph)CH ₂	CH ₃
A-302	B-302	(4-F-Ph)CH ₂	CH ₃
A-303	B-303	(2-Cl-Ph)CH ₂	CH ₃
A-304	B-304	(3-Cl-Ph)CH ₂	CH ₃
A-305	B-305	(4-Cl-Ph)CH ₂	CH ₃
A-306	B-306	(2-CF ₃ -Ph)CH ₂	CH ₃
A-307	B-307	(3-CF ₃ -Ph)CH ₂	CH ₃
A-308	B-308	(4-CF ₃ -Ph)CH ₂	CH ₃
A-309	B-309	(2-CH ₃ O-Ph)CH ₂	CH ₃
A-310	B-310	(3-CH ₃ O-Ph)CH ₂	CH ₃
A-311	B-311	(4-CH ₃ O-Ph)CH ₂	CH ₃

Compound		R ³	R ⁴
A-312	B-312	HO	CH ₃
A-313	B-313	CH ₃ O	CH ₃
A-314	B-314	CH ₃ CH ₂ O	CH ₃
A-315	B-315	n-C ₃ H ₇ O	CH ₃
A-316	B-316	iso-C ₃ H ₇ O	CH ₃
A-317	B-317	CH ₂ =CHCH ₂ O	CH ₃
A-318	B-318	CH ₂ =C(CH ₃)CH ₂ O	CH ₃
A-319	B-319	CH ₂ =CHCH(CH ₃)O	CH ₃
A-320	B-320	CH ₂ =CHCH(CH ₃)O	CH ₃
A-321	B-321	CH ₂ =CHC(CH ₃) ₂ O	CH ₃
A-322	B-322	CH ₃ CH=CHCH ₂ O	CH ₃
A-323	B-323	CHCCH ₂ O	CH ₃
A-324	B-324	CH ₃ CCCH ₂ O	CH ₃
A-325	B-325	CHCCH(CH ₃)O	CH ₃
A-326	B-326	CH ₃ O ₂ CCH(CH ₃)O	CH ₃
A-327	B-327	CH ₃ O ₂ CC(CH ₃) ₂ O	CH ₃
A-328	B-328	CH ₃ O ₂ CCH ₂ O	CH ₃
A-329	B-329	PhCH ₂ O	CH ₃
A-330	B-330	PhO	CH ₃
A-331	B-331	NH ₂	CH ₃
A-332	B-332	CH ₃ NH	CH ₃
A-333	B-333	C ₂ H ₅ NH	CH ₃
A-334	B-334	n-C ₃ H ₇ NH	CH ₃
A-335	B-335	iso-C ₃ H ₇ NH	CH ₃
A-336	B-336	PhCH ₂ NH	CH ₃
A-337	B-337	PhNH	CH ₃
A-338	B-338	2-F-PhNH	CH ₃
A-339	B-339	3-F-PhNH	CH ₃
A-340	B-340	4-F-PhNH	CH ₃
A-341	B-341	2-Cl-PhNH	CH ₃
A-342	B-342	3-Cl-PhNH	CH ₃
A-343	B-343	4-Cl-PhNH	CH ₃
A-344	B-344	2-CF ₃ -PhNH	CH ₃
A-345	B-345	3-CF ₃ -PhNH	CH ₃
A-346	B-346	2-CH ₃ O-PhNH	CH ₃
A-347	B-347	3-CH ₃ O-PhNH	CH ₃
A-348	B-348	4-CH ₃ O-PhNH	CH ₃
A-349	B-349	Ph	CH ₃
A-350	B-350	2-F-Ph	CH ₃
A-351	B-351	3-F-Ph	CH ₃
A-352	B-352	4-F-Ph	CH ₃
A-353	B-353	2-Cl-Ph	CH ₃
A-354	B-354	3-Cl-Ph	CH ₃

Compound		R ³	R ⁴
A-355	B-355	4-Cl-Ph	CH ₃
A-356	B-356	2-Br-Ph	CH ₃
A-357	B-357	3-Br-Ph	CH ₃
A-358	B-358	4-Br-Ph	CH ₃
A-359	B-359	2-I-Ph	CH ₃
A-360	B-360	3-I-Ph	CH ₃
A-361	B-361	4-I-Ph	CH ₃
A-362	B-362	2-CF ₃ -Ph	CH ₃
A-363	B-363	3-CF ₃ -Ph	CH ₃
A-364	B-364	4-CF ₃ -Ph	CH ₃
A-365	B-365	2-CH ₃ -Ph	CH ₃
A-366	B-366	3-CH ₃ -Ph	CH ₃
A-367	B-367	4-CH ₃ -Ph	CH ₃
A-368	B-368	2-CH ₃ O-Ph	CH ₃
A-369	B-369	3-CH ₃ O-Ph	CH ₃
A-370	B-370	4-CH ₃ O-Ph	CH ₃
A-371	B-371	2-NO ₂ -Ph	CH ₃
A-372	B-372	3-NO ₂ -Ph	CH ₃
A-373	B-373	4-NO ₂ -Ph	CH ₃
A-374	B-374	2-CN-Ph	CH ₃
A-375	B-375	3-CN-Ph	CH ₃
A-376	B-376	4-CN-Ph	CH ₃
A-377	B-377	2-CO ₂ Me-Ph	CH ₃
A-378	B-378	3-CO ₂ Me-Ph	CH ₃
A-379	B-379	4-CO ₂ Me-Ph	CH ₃
A-380	B-380	2-HO-Ph	CH ₃
A-381	B-381	3-HO-Ph	CH ₃
A-382	B-382	4-HO-Ph	CH ₃
A-383	B-383	2-NH ₂ -Ph	CH ₃
A-384	B-384	3-NH ₂ -Ph	CH ₃
A-385	B-385	4-NH ₂ -Ph	CH ₃
A-386	B-386	2-CF ₃ O-Ph	CH ₃
A-387	B-387	3-CF ₃ O-Ph	CH ₃
A-388	B-388	4-CF ₃ O-Ph	CH ₃
A-389	B-389	4-CF ₃ CH ₂ O-Ph	CH ₃
A-390	B-390	4-(4-Cl-PhO)-Ph	CH ₃
A-391	B-391	4-(4-CF ₃ -PhO)-Ph	CH ₃
A-392	B-392	2,3-diCl-Ph	CH ₃
A-393	B-393	2,4-diCl-Ph	CH ₃
A-394	B-394	2,5-diCl-Ph	CH ₃
A-395	B-395	2,6-diCl-Ph	CH ₃
A-396	B-396	3,4-diCl-Ph	CH ₃
A-397	B-397	3,5-diCl-Ph	CH ₃

Compound		R ³	R ⁴
A-398	B-398	2-Pyridyl	CH ₃
A-399	B-399	3-Pyridyl	CH ₃
A-400	B-400	4-Pyridyl	CH ₃
A-401	B-401	2-Pyrimidyl	CH ₃
A-402	B-402	1-Pyrrolyl	CH ₃
A-403	B-403	1-Pyrazolyl	CH ₃
A-404	B-404	3-Pyrazolyl	CH ₃
A-405	B-405	1,2,4-Triazol-1-yl	CH ₃
A-406	B-406	1,2,4-Triazol-3-yl	CH ₃
A-407	B-407	2-Furanyl	CH ₃
A-408	B-408	3-Furanyl	CH ₃
A-409	B-409	2-Thienyl	CH ₃
A-410	B-410	3-Thienyl	CH ₃
A-411	B-411	2-Thiazolyl	CH ₃
A-412	B-412	1,3,4-Thiadiazol-2-yl	CH ₃
A-413	B-413	3-Isoxazolyl	CH ₃
A-414	B-414	CH ₃ CO	CH ₃
A-415	B-415	PhCO	CH ₃
A-416	B-416	PhCH ₂ CO	CH ₃
A-417	B-417	CH ₃ SO ₂ NH	CH ₃
A-418	B-418	PhSO ₂ NH	CH ₃
A-419	B-419	CF ₃ CH ₂	CH ₃
A-420	B-420	ClCH ₂ CH ₂	CH ₃
A-421	B-421	ClCH ₂ CH ₂ CH ₂	CH ₃
A-422	B-422	CH ₃ OCH ₂ CH ₂	CH ₃
A-423	B-423	CH ₃ CH ₂ OCH ₂ CH ₂	CH ₃
A-424	B-424	CH ₃ OCH ₂ CH ₂ CH ₂	CH ₃
A-425	B-425	C ₂ H ₅ OCH ₂ CH ₂ CH ₂	CH ₃
A-426	B-426	n-C ₄ H ₉ OCH ₂ CH ₂ CH ₂	CH ₃
A-427	B-427	(CH ₃ O) ₂ CHCH ₂	CH ₃
A-428	B-428	CH ₃ CONH	CH ₃
A-429	B-429	PhCONH	CH ₃
A-430	B-430	Ph ₂ C=N	CH ₃
A-431	B-431	HOCH ₂ CH ₂	CH ₃
A-432	B-432	HOCH ₂ CH ₂ CH ₂	CH ₃
A-433	B-433	CH ₃ O ₂ CCH ₂	CH ₃
A-434	B-434	CH ₃ O ₂ CCH(CH ₃)	CH ₃
A-435	B-435	CH ₃ O ₂ CC(CH ₃) ₂	CH ₃
A-436	B-436	NCCH ₂	CH ₃
A-437	B-437	NC(CH ₃)(iso-C ₃ H ₇)C	CH ₃
A-438	B-438	(1-pyrrolidinyl)CH ₂ CH ₂	C ₂ H ₅
A-439	B-439	CH ₂ =CHCH ₂	C ₂ H ₅
A-440	B-440	CHCCH ₂	C ₂ H ₅

Compound		R ³	R ⁴
A-441	B-441	CH ₃ CCCH ₂	C ₂ H ₅
A-442	B-442	(cyclo-C ₃ H ₅)CH ₂	C ₂ H ₅
A-443	B-443	PhCH ₂	C ₂ H ₅
A-444	B-444	PhCH ₂ CH ₂	C ₂ H ₅
A-445	B-445	(2-Cl-Ph)CH ₂	C ₂ H ₅
A-446	B-446	(3-Cl-Ph)CH ₂	C ₂ H ₅
A-447	B-447	(4-Cl-Ph)CH ₂	C ₂ H ₅
A-448	B-448	(2-CF ₃ -Ph)CH ₂	C ₂ H ₅
A-449	B-449	(3-CF ₃ -Ph)CH ₂	C ₂ H ₅
A-450	B-450	(4-CF ₃ -Ph)CH ₂	C ₂ H ₅
A-451	B-451	(2-CH ₃ O-Ph)CH ₂	C ₂ H ₅
A-452	B-452	(3-CH ₃ O-Ph)CH ₂	C ₂ H ₅
A-453	B-453	(4-CH ₃ O-Ph)CH ₂	C ₂ H ₅
A-454	B-454	HO	C ₂ H ₅
A-455	B-455	CH ₃ O	C ₂ H ₅
A-456	B-456	CH ₃ CH ₂ O	C ₂ H ₅
A-457	B-457	n-C ₃ H ₇ O	C ₂ H ₅
A-458	B-458	iso-C ₃ H ₇ O	C ₂ H ₅
A-459	B-459	CH ₂ =CHCH ₂ O	C ₂ H ₅
A-460	B-460	CHCCH ₂ O	C ₂ H ₅
A-461	B-461	PhCH ₂ O	C ₂ H ₅
A-462	B-462	PhO	C ₂ H ₅
A-463	B-463	NH ₂	C ₂ H ₅
A-464	B-464	CH ₃ NH	C ₂ H ₅
A-465	B-465	C ₂ H ₅ NH	C ₂ H ₅
A-466	B-466	n-C ₃ H ₇ NH	C ₂ H ₅
A-467	B-467	iso-C ₃ H ₇ NH	C ₂ H ₅
A-468	B-468	PhCH ₂ NH	C ₂ H ₅
A-469	B-469	PhNH	C ₂ H ₅
A-470	B-470	2-Cl-PhNH	C ₂ H ₅
A-471	B-471	3-Cl-PhNH	C ₂ H ₅
A-472	B-472	4-Cl-PhNH	C ₂ H ₅
A-473	B-473	2-CF ₃ -PhNH	C ₂ H ₅
A-474	B-474	3-CF ₃ -PhNH	C ₂ H ₅
A-475	B-475	2-CH ₃ O-PhNH	C ₂ H ₅
A-476	B-476	3-CH ₃ O-PhNH	C ₂ H ₅
A-477	B-477	4-CH ₃ O-PhNH	C ₂ H ₅
A-478	B-478	Ph	C ₂ H ₅
A-479	B-479	2-Cl-Ph	C ₂ H ₅
A-480	B-480	3-Cl-Ph	C ₂ H ₅
A-481	B-481	4-Cl-Ph	C ₂ H ₅
A-482	B-482	2-CF ₃ -Ph	C ₂ H ₅
A-483	B-483	3-CF ₃ -Ph	C ₂ H ₅

Compound		R ³	R ⁴
A-484	B-484	4-CF ₃ -Ph	C ₂ H ₅
A-485	B-485	2-CH ₃ O-Ph	C ₂ H ₅
A-486	B-486	3-CH ₃ O-Ph	C ₂ H ₅
A-487	B-487	4-CH ₃ O-Ph	C ₂ H ₅
A-488	B-488	2-HO-Ph	C ₂ H ₅
A-489	B-489	3-HO-Ph	C ₂ H ₅
A-490	B-490	4-HO-Ph	C ₂ H ₅
A-491	B-491	2-NH ₂ -Ph	C ₂ H ₅
A-492	B-492	3-NH ₂ -Ph	C ₂ H ₅
A-493	B-493	4-NH ₂ -Ph	C ₂ H ₅
A-494	B-494	2-HOCH ₂ -Ph	C ₂ H ₅
A-495	B-495	4-CF ₃ O-Ph	C ₂ H ₅
A-496	B-496	4-CF ₃ CH ₂ O-Ph	C ₂ H ₅
A-497	B-497	4-(4-Cl-PhO)-Ph	C ₂ H ₅
A-498	B-498	4-(4-CF ₃ -PhO)-Ph	C ₂ H ₅
A-499	B-499	2,3-diCl-Ph	C ₂ H ₅
A-500	B-500	1-Pyrrolyl	C ₂ H ₅
A-501	B-501	1-Pyrazolyl	C ₂ H ₅
A-502	B-502	1,2,4-Triazol-1-yl	C ₂ H ₅
A-503	B-503	2-Thiazolyl	C ₂ H ₅
A-504	B-504	1,3,4-Thiadiazol-2-yl	C ₂ H ₅
A-505	B-505	CH ₃ CO	C ₂ H ₅
A-506	B-506	PhCO	C ₂ H ₅
A-507	B-507	PhSO ₂ NH	C ₂ H ₅
A-508	B-508	CF ₃ CH ₂	C ₂ H ₅
A-509	B-509	ClCH ₂ CH ₂	C ₂ H ₅
A-510	B-510	ClCH ₂ CH ₂ CH ₂	C ₂ H ₅
A-511	B-511	CH ₃ OCH ₂ CH ₂	C ₂ H ₅
A-512	B-512	CH ₃ CH ₂ OCH ₂ CH ₂	C ₂ H ₅
A-513	B-513	CH ₃ OCH ₂ CH ₂ CH ₂	C ₂ H ₅
A-514	B-514	C ₂ H ₅ OCH ₂ CH ₂ CH ₂	C ₂ H ₅
A-515	B-515	n-C ₄ H ₉ OCH ₂ CH ₂ CH ₂	C ₂ H ₅
A-516	B-516	(CH ₃ O) ₂ CHCH ₂	C ₂ H ₅
A-517	B-517	CH ₃ CONH	C ₂ H ₅
A-518	B-518	PhCONH	C ₂ H ₅
A-519	B-519	HOCH ₂ CH ₂	C ₂ H ₅
A-520	B-520	HOCH ₂ CH ₂ CH ₂	C ₂ H ₅
A-521	B-521	CH ₃ O ₂ CCH ₂	C ₂ H ₅
A-522	B-522	CH ₃ O ₂ CCH(CH ₃)	C ₂ H ₅
A-523	B-523	NCCH ₂	n-C ₃ H ₇
A-524	B-524	HOCH ₂ CH ₂	n-C ₃ H ₇
A-525	B-525	CH ₂ =CHCH ₂	iso-C ₃ H ₇
A-526	B-526	CHCCH ₂	iso-C ₃ H ₇

Compound		R ³	R ⁴
A-527	B-527	CH ₃ CCCH ₂	iso-C ₃ H ₇
A-528	B-528	(cyclo-C ₃ H ₅)CH ₂	iso-C ₃ H ₇
A-529	B-529	PhCH ₂	iso-C ₃ H ₇
A-530	B-530	PhCH ₂ CH ₂	iso-C ₃ H ₇
A-531	B-531	(2-Cl-Ph)CH ₂	iso-C ₃ H ₇
A-532	B-532	(3-Cl-Ph)CH ₂	iso-C ₃ H ₇
A-533	B-533	(4-Cl-Ph)CH ₂	iso-C ₃ H ₇
A-534	B-534	(2-CF ₃ -Ph)CH ₂	iso-C ₃ H ₇
A-535	B-535	(3-CF ₃ -Ph)CH ₂	iso-C ₃ H ₇
A-536	B-536	(4-CF ₃ -Ph)CH ₂	iso-C ₃ H ₇
A-537	B-537	(2-CH ₃ O-Ph)CH ₂	iso-C ₃ H ₇
A-538	B-538	(3-CH ₃ O-Ph)CH ₂	iso-C ₃ H ₇
A-539	B-539	(4-CH ₃ O-Ph)CH ₂	iso-C ₃ H ₇
A-540	B-540	HO	iso-C ₃ H ₇
A-541	B-541	CH ₃ O	iso-C ₃ H ₇
A-542	B-542	CH ₃ CH ₂ O	iso-C ₃ H ₇
A-543	B-543	n-C ₃ H ₇ O	iso-C ₃ H ₇
A-544	B-544	iso-C ₃ H ₇ O	iso-C ₃ H ₇
A-545	B-545	CH ₂ =CHCH ₂ O	iso-C ₃ H ₇
A-546	B-546	CHCCH ₂ O	iso-C ₃ H ₇
A-547	B-547	PhCH ₂ O	iso-C ₃ H ₇
A-548	B-548	PhO	iso-C ₃ H ₇
A-549	B-549	NH ₂	iso-C ₃ H ₇
A-550	B-550	CH ₃ NH	iso-C ₃ H ₇
A-551	B-551	C ₂ H ₅ NH	iso-C ₃ H ₇
A-552	B-552	n-C ₃ H ₇ NH	iso-C ₃ H ₇
A-553	B-553	iso-C ₃ H ₇ NH	iso-C ₃ H ₇
A-554	B-554	PhCH ₂ NH	iso-C ₃ H ₇
A-555	B-555	PhNH	iso-C ₃ H ₇
A-556	B-556	2-Cl-PhNH	iso-C ₃ H ₇
A-557	B-557	3-Cl-PhNH	iso-C ₃ H ₇
A-558	B-558	4-Cl-PhNH	iso-C ₃ H ₇
A-559	B-559	2-CF ₃ -PhNH	iso-C ₃ H ₇
A-560	B-560	3-CF ₃ -PhNH	iso-C ₃ H ₇
A-561	B-561	2-CH ₃ O-PhNH	iso-C ₃ H ₇
A-562	B-562	3-CH ₃ O-PhNH	iso-C ₃ H ₇
A-563	B-563	4-CH ₃ O-PhNH	iso-C ₃ H ₇
A-564	B-564	Ph	iso-C ₃ H ₇
A-565	B-565	2-Cl-Ph	iso-C ₃ H ₇
A-566	B-566	3-Cl-Ph	iso-C ₃ H ₇
A-567	B-567	4-Cl-Ph	iso-C ₃ H ₇
A-568	B-568	2-CF ₃ -Ph	iso-C ₃ H ₇
A-569	B-569	3-CF ₃ -Ph	iso-C ₃ H ₇

Compound		R ³	R ⁴
A-570	B-570	4-CF ₃ -Ph	iso-C ₃ H ₇
A-571	B-571	2-CH ₃ O-Ph	iso-C ₃ H ₇
A-572	B-572	3-CH ₃ O-Ph	iso-C ₃ H ₇
A-573	B-573	4-CH ₃ O-Ph	iso-C ₃ H ₇
A-574	B-574	2-HO-Ph	iso-C ₃ H ₇
A-575	B-575	3-HO-Ph	iso-C ₃ H ₇
A-576	B-576	4-HO-Ph	iso-C ₃ H ₇
A-577	B-577	2-NH ₂ -Ph	iso-C ₃ H ₇
A-578	B-578	3-NH ₂ -Ph	iso-C ₃ H ₇
A-579	B-579	4-NH ₂ -Ph	iso-C ₃ H ₇
A-580	B-580	2-HOCH ₂ -Ph	iso-C ₃ H ₇
A-581	B-581	4-CF ₃ O-Ph	iso-C ₃ H ₇
A-582	B-582	4-CF ₃ CH ₂ O-Ph	iso-C ₃ H ₇
A-583	B-583	4-(4-Cl-PhO)-Ph	iso-C ₃ H ₇
A-584	B-584	4-(4-CF ₃ -PhO)-Ph	iso-C ₃ H ₇
A-585	B-585	2,3-diCl-Ph	iso-C ₃ H ₇
A-586	B-586	1-Pyrrolyl	iso-C ₃ H ₇
A-587	B-587	1-Pyrazolyl	iso-C ₃ H ₇
A-588	B-588	1,2,4-Triazol-1-yl	iso-C ₃ H ₇
A-589	B-589	2-Thiazolyl	iso-C ₃ H ₇
A-590	B-590	1,3,4-Thiadiazol-2-yl	iso-C ₃ H ₇
A-591	B-591	CH ₃ CO	iso-C ₃ H ₇
A-592	B-592	PhCO	iso-C ₃ H ₇
A-593	B-593	PhSO ₂ NH	iso-C ₃ H ₇
A-594	B-594	CF ₃ CH ₂	iso-C ₃ H ₇
A-595	B-595	ClCH ₂ CH ₂	iso-C ₃ H ₇
A-596	B-596	ClCH ₂ CH ₂ CH ₂	iso-C ₃ H ₇
A-597	B-597	CH ₃ OCH ₂ CH ₂	iso-C ₃ H ₇
A-598	B-598	CH ₃ CH ₂ OCH ₂ CH ₂	iso-C ₃ H ₇
A-599	B-599	CH ₃ OCH ₂ CH ₂ CH ₂	iso-C ₃ H ₇
A-600	B-600	C ₂ H ₅ OCH ₂ CH ₂ CH ₂	iso-C ₃ H ₇
A-601	B-601	n-C ₄ H ₉ OCH ₂ CH ₂ CH ₂	iso-C ₃ H ₇
A-602	B-602	(CH ₃ O) ₂ CHCH ₂	iso-C ₃ H ₇
A-603	B-603	CH ₃ CONH	iso-C ₃ H ₇
A-604	B-604	PhCONH	iso-C ₃ H ₇
A-605	B-605	HOCH ₂ CH ₂	iso-C ₃ H ₇
A-606	B-606	HOCH ₂ CH ₂ CH ₂	iso-C ₃ H ₇
A-607	B-607	CH ₃ O ₂ CCH ₂	iso-C ₃ H ₇
A-608	B-608	CH ₃ O ₂ CCH(CH ₃)	iso-C ₃ H ₇
A-609	B-609	NCCH ₂	iso-C ₃ H ₇
A-610	B-610	NC(CH ₃)(iso-C ₃ H ₇)	tert-C ₄ H ₉
A-611	B-611	CH ₂ =CHCH ₂	tert-C ₄ H ₉
A-612	B-612	CHCCH ₂	tert-C ₄ H ₉

Compound		R ³	R ⁴
A-613	B-613	CH ₃ CCCH ₂	tert-C ₄ H ₉
A-614	B-614	(cyclo-C ₃ H ₅)CH ₂	tert-C ₄ H ₉
A-615	B-615	PhCH ₂	tert-C ₄ H ₉
A-616	B-616	PhCH ₂ CH ₂	tert-C ₄ H ₉
A-617	B-617	(2-Cl-Ph)CH ₂	tert-C ₄ H ₉
A-618	B-618	(3-Cl-Ph)CH ₂	tert-C ₄ H ₉
A-619	B-619	(4-Cl-Ph)CH ₂	tert-C ₄ H ₉
A-620	B-620	(2-CF ₃ -Ph)CH ₂	tert-C ₄ H ₉
A-621	B-621	(3-CF ₃ -Ph)CH ₂	tert-C ₄ H ₉
A-622	B-622	(4-CF ₃ -Ph)CH ₂	tert-C ₄ H ₉
A-623	B-623	(2-CH ₃ O-Ph)CH ₂	tert-C ₄ H ₉
A-624	B-624	(3-CH ₃ O-Ph)CH ₂	tert-C ₄ H ₉
A-625	B-625	(4-CH ₃ O-Ph)CH ₂	tert-C ₄ H ₉
A-626	B-626	HO	tert-C ₄ H ₉
A-627	B-627	CH ₃ O	tert-C ₄ H ₉
A-628	B-628	CH ₃ CH ₂ O	tert-C ₄ H ₉
A-629	B-629	n-C ₃ H ₇ O	tert-C ₄ H ₉
A-630	B-630	iso-C ₃ H ₇ O	tert-C ₄ H ₉
A-631	B-631	CH ₂ =CHCH ₂ O	tert-C ₄ H ₉
A-632	B-632	CHCCH ₂ O	tert-C ₄ H ₉
A-633	B-633	PhCH ₂ O	tert-C ₄ H ₉
A-634	B-634	PhO	tert-C ₄ H ₉
A-635	B-635	NH ₂	tert-C ₄ H ₉
A-636	B-636	CH ₃ NH	tert-C ₄ H ₉
A-637	B-637	C ₂ H ₅ NH	tert-C ₄ H ₉
A-638	B-638	n-C ₃ H ₇ NH	tert-C ₄ H ₉
A-639	B-639	iso-C ₃ H ₇ NH	tert-C ₄ H ₉
A-640	B-640	PhCH ₂ NH	tert-C ₄ H ₉
A-641	B-641	PhNH	tert-C ₄ H ₉
A-642	B-642	2-Cl-PhNH	tert-C ₄ H ₉
A-643	B-643	3-Cl-PhNH	tert-C ₄ H ₉
A-644	B-644	4-Cl-PhNH	tert-C ₄ H ₉
A-645	B-645	2-CF ₃ -PhNH	tert-C ₄ H ₉
A-646	B-646	3-CF ₃ -PhNH	tert-C ₄ H ₉
A-647	B-647	2-CH ₃ O-PhNH	tert-C ₄ H ₉
A-648	B-648	3-CH ₃ O-PhNH	tert-C ₄ H ₉
A-649	B-649	4-CH ₃ O-PhNH	tert-C ₄ H ₉
A-650	B-650	Ph	tert-C ₄ H ₉
A-651	B-651	2-Cl-Ph	tert-C ₄ H ₉
A-652	B-652	3-Cl-Ph	tert-C ₄ H ₉
A-653	B-653	4-Cl-Ph	tert-C ₄ H ₉
A-654	B-654	2-CF ₃ -Ph	tert-C ₄ H ₉
A-655	B-655	3-CF ₃ -Ph	tert-C ₄ H ₉

Compound		R ³	R ⁴
A-656	B-656	4-CF ₃ -Ph	tert-C ₄ H ₉
A-657	B-657	2-CH ₃ O-Ph	tert-C ₄ H ₉
A-658	B-658	3-CH ₃ O-Ph	tert-C ₄ H ₉
A-659	B-659	4-CH ₃ O-Ph	tert-C ₄ H ₉
A-660	B-660	2-HO-Ph	tert-C ₄ H ₉
A-661	B-661	3-HO-Ph	tert-C ₄ H ₉
A-662	B-662	4-HO-Ph	tert-C ₄ H ₉
A-663	B-663	2-NH ₂ -Ph	tert-C ₄ H ₉
A-664	B-664	3-NH ₂ -Ph	tert-C ₄ H ₉
A-665	B-665	4-NH ₂ -Ph	tert-C ₄ H ₉
A-666	B-666	2-HOCH ₂ -Ph	tert-C ₄ H ₉
A-667	B-667	4-CF ₃ O-Ph	tert-C ₄ H ₉
A-668	B-668	4-CF ₃ CH ₂ O-Ph	tert-C ₄ H ₉
A-669	B-669	4-(4-Cl-PhO)-Ph	tert-C ₄ H ₉
A-670	B-670	4-(4-CF ₃ -PhO)-Ph	tert-C ₄ H ₉
A-671	B-671	2,3-diCl-Ph	tert-C ₄ H ₉
A-672	B-672	1-Pyrrolyl	tert-C ₄ H ₉
A-673	B-673	1-Pyrazolyl	tert-C ₄ H ₉
A-674	B-674	1,2,4-Triazol-1-yl	tert-C ₄ H ₉
A-675	B-675	2-Thiazolyl	tert-C ₄ H ₉
A-676	B-676	1,3,4-Thiadiazol-2-yl	tert-C ₄ H ₉
A-677	B-677	CH ₃ CO	tert-C ₄ H ₉
A-678	B-678	PhCO	tert-C ₄ H ₉
A-679	B-679	PhSO ₂ NH	tert-C ₄ H ₉
A-680	B-680	CF ₃ CH ₂	tert-C ₄ H ₉
A-681	B-681	ClCH ₂ CH ₂	tert-C ₄ H ₉
A-682	B-682	ClCH ₂ CH ₂ CH ₂	tert-C ₄ H ₉
A-683	B-683	CH ₃ OCH ₂ CH ₂	tert-C ₄ H ₉
A-684	B-684	CH ₃ CH ₂ OCH ₂ CH ₂	tert-C ₄ H ₉
A-685	B-685	CH ₃ OCH ₂ CH ₂ CH ₂	tert-C ₄ H ₉
A-686	B-686	C ₂ H ₅ OCH ₂ CH ₂ CH ₂	tert-C ₄ H ₉
A-687	B-687	n-C ₄ H ₉ OCH ₂ CH ₂ CH ₂	tert-C ₄ H ₉
A-688	B-688	(CH ₃ O) ₂ CHCH ₂	tert-C ₄ H ₉
A-689	B-689	CH ₃ CONH	tert-C ₄ H ₉
A-690	B-690	PhCONH	tert-C ₄ H ₉
A-691	B-691	HOCH ₂ CH ₂	tert-C ₄ H ₉
A-692	B-692	HOCH ₂ CH ₂ CH ₂	tert-C ₄ H ₉
A-693	B-693	CH ₃ O ₂ CCH ₂	tert-C ₄ H ₉
A-694	B-694	CH ₃ O ₂ CCH(CH ₃)	tert-C ₄ H ₉
A-695	B-695	NCCH ₂	tert-C ₄ H ₉
A-696	B-696	NC(CH ₃)(iso-C ₃ H ₇)C	CH ₂ =CHCH ₂
A-697	B-697	CH ₂ =CHCH ₂	CH ₂ =CHCH ₂
A-698	B-698	CHCCH ₂	CH ₂ =CHCH ₂

Compound		R ³	R ⁴
A-699	B-699	CH ₃ CCCH ₂	CH ₂ =CHCH ₂
A-700	B-700	(cyclo-C ₃ H ₅)CH ₂	CH ₂ =CHCH ₂
A-701	B-701	PhCH ₂	CH ₂ =CHCH ₂
A-702	B-702	PhCH ₂ CH ₂	CH ₂ =CHCH ₂
A-703	B-703	(2-Cl-Ph)CH ₂	CH ₂ =CHCH ₂
A-704	B-704	(3-Cl-Ph)CH ₂	CH ₂ =CHCH ₂
A-705	B-705	(4-Cl-Ph)CH ₂	CH ₂ =CHCH ₂
A-706	B-706	(2-CF ₃ -Ph)CH ₂	CH ₂ =CHCH ₂
A-707	B-707	(3-CF ₃ -Ph)CH ₂	CH ₂ =CHCH ₂
A-708	B-708	(4-CF ₃ -Ph)CH ₂	CH ₂ =CHCH ₂
A-709	B-709	(2-CH ₃ O-Ph)CH ₂	CH ₂ =CHCH ₂
A-710	B-710	(3-CH ₃ O-Ph)CH ₂	CH ₂ =CHCH ₂
A-711	B-711	(4-CH ₃ O-Ph)CH ₂	CH ₂ =CHCH ₂
A-712	B-712	HO	CH ₂ =CHCH ₂
A-713	B-713	CH ₃ O	CH ₂ =CHCH ₂
A-714	B-714	CH ₃ CH ₂ O	CH ₂ =CHCH ₂
A-715	B-715	n-C ₃ H ₇ O	CH ₂ =CHCH ₂
A-716	B-716	iso-C ₃ H ₇ O	CH ₂ =CHCH ₂
A-717	B-717	CH ₂ =CHCH ₂ O	CH ₂ =CHCH ₂
A-718	B-718	CHCCH ₂ O	CH ₂ =CHCH ₂
A-719	B-719	PhCH ₂ O	CH ₂ =CHCH ₂
A-720	B-720	PhO	CH ₂ =CHCH ₂
A-721	B-721	NH ₂	CH ₂ =CHCH ₂
A-722	B-722	CH ₃ NH	CH ₂ =CHCH ₂
A-723	B-723	C ₂ H ₅ NH	CH ₂ =CHCH ₂
A-724	B-724	n-C ₃ H ₇ NH	CH ₂ =CHCH ₂
A-725	B-725	iso-C ₃ H ₇ NH	CH ₂ =CHCH ₂
A-726	B-726	PhCH ₂ NH	CH ₂ =CHCH ₂
A-727	B-727	PhNH	CH ₂ =CHCH ₂
A-728	B-728	2-Cl-PhNH	CH ₂ =CHCH ₂
A-729	B-729	3-Cl-PhNH	CH ₂ =CHCH ₂
A-730	B-730	4-Cl-PhNH	CH ₂ =CHCH ₂
A-731	B-731	2-CF ₃ -PhNH	CH ₂ =CHCH ₂
A-732	B-732	3-CF ₃ -PhNH	CH ₂ =CHCH ₂
A-733	B-733	2-CH ₃ O-PhNH	CH ₂ =CHCH ₂
A-734	B-734	3-CH ₃ O-PhNH	CH ₂ =CHCH ₂
A-735	B-735	4-CH ₃ O-PhNH	CH ₂ =CHCH ₂
A-736	B-736	Ph	CH ₂ =CHCH ₂
A-737	B-737	2-Cl-Ph	CH ₂ =CHCH ₂
A-738	B-738	3-Cl-Ph	CH ₂ =CHCH ₂
A-739	B-739	4-Cl-Ph	CH ₂ =CHCH ₂
A-740	B-740	2-CF ₃ -Ph	CH ₂ =CHCH ₂
A-741	B-741	3-CF ₃ -Ph	CH ₂ =CHCH ₂

Compound		R ³	R ⁴
A-742	B-742	4-CF ₃ -Ph	CH ₂ =CHCH ₂
A-743	B-743	2-CH ₃ O-Ph	CH ₂ =CHCH ₂
A-744	B-744	3-CH ₃ O-Ph	CH ₂ =CHCH ₂
A-745	B-745	4-CH ₃ O-Ph	CH ₂ =CHCH ₂
A-746	B-746	2-HO-Ph	CH ₂ =CHCH ₂
A-747	B-747	3-HO-Ph	CH ₂ =CHCH ₂
A-748	B-748	4-HO-Ph	CH ₂ =CHCH ₂
A-749	B-749	2-NH ₂ -Ph	CH ₂ =CHCH ₂
A-750	B-750	3-NH ₂ -Ph	CH ₂ =CHCH ₂
A-751	B-751	4-NH ₂ -Ph	CH ₂ =CHCH ₂
A-752	B-752	2-HOCH ₂ -Ph	CH ₂ =CHCH ₂
A-753	B-753	4-CF ₃ O-Ph	CH ₂ =CHCH ₂
A-754	B-754	4-CF ₃ CH ₂ O-Ph	CH ₂ =CHCH ₂
A-755	B-755	4-(4-Cl-PhO)-Ph	CH ₂ =CHCH ₂
A-756	B-756	4-(4-CF ₃ -PhO)-Ph	CH ₂ =CHCH ₂
A-757	B-757	2,3-diCl-Ph	CH ₂ =CHCH ₂
A-758	B-758	1-Pyrrolyl	CH ₂ =CHCH ₂
A-759	B-759	1-Pyrazolyl	CH ₂ =CHCH ₂
A-760	B-760	1,2,4-Triazol-1-yl	CH ₂ =CHCH ₂
A-761	B-761	2-Thiazolyl	CH ₂ =CHCH ₂
A-762	B-762	1,3,4-Thiadiazol-2-yl	CH ₂ =CHCH ₂
A-763	B-763	CH ₃ CO	CH ₂ =CHCH ₂
A-764	B-764	PhCO	CH ₂ =CHCH ₂
A-765	B-765	PhSO ₂ NH	CH ₂ =CHCH ₂
A-766	B-766	CF ₃ CH ₂	CH ₂ =CHCH ₂
A-767	B-767	ClCH ₂ CH ₂	CH ₂ =CHCH ₂
A-768	B-768	ClCH ₂ CH ₂ CH ₂	CH ₂ =CHCH ₂
A-769	B-769	CH ₃ OCH ₂ CH ₂	CH ₂ =CHCH ₂
A-770	B-770	CH ₃ CH ₂ OCH ₂ CH ₂	CH ₂ =CHCH ₂
A-771	B-771	CH ₃ OCH ₂ CH ₂ CH ₂	CH ₂ =CHCH ₂
A-772	B-772	C ₂ H ₅ OCH ₂ CH ₂ CH ₂	CH ₂ =CHCH ₂
A-773	B-773	n-C ₄ H ₉ OCH ₂ CH ₂ CH ₂	CH ₂ =CHCH ₂
A-774	B-774	(CH ₃ O) ₂ CHCH ₂	CH ₂ =CHCH ₂
A-775	B-775	CH ₃ CONH	CH ₂ =CHCH ₂
A-776	B-776	PhCONH	CH ₂ =CHCH ₂
A-777	B-777	HOCH ₂ CH ₂	CH ₂ =CHCH ₂
A-778	B-778	HOCH ₂ CH ₂ CH ₂	CH ₂ =CHCH ₂
A-779	B-779	CH ₃ O ₂ CCH ₂	CH ₂ =CHCH ₂
A-780	B-780	CH ₃ O ₂ CCH(CH ₃)	CH ₂ =CHCH ₂
A-781	B-781	NCCH ₂	CH ₂ =CHCH ₂
A-782	B-782	NC(CH ₃)(iso-C ₃ H ₇)C	PhCH ₂
A-783	B-783	CH ₂ =CHCH ₂	PhCH ₂
A-784	B-784	CHCCH ₂	PhCH ₂

Compound		R ³	R ⁴
A-785	B-785	CH ₃ CCCH ₂	PhCH ₂
A-786	B-786	(cyclo-C ₃ H ₅)CH ₂	PhCH ₂
A-787	B-787	PhCH ₂	PhCH ₂
A-788	B-788	PhCH ₂ CH ₂	PhCH ₂
A-789	B-789	(2-Cl-Ph)CH ₂	PhCH ₂
A-790	B-790	(3-Cl-Ph)CH ₂	PhCH ₂
A-791	B-791	(4-Cl-Ph)CH ₂	PhCH ₂
A-792	B-792	(2-CF ₃ -Ph)CH ₂	PhCH ₂
A-793	B-793	(3-CF ₃ -Ph)CH ₂	PhCH ₂
A-794	B-794	(4-CF ₃ -Ph)CH ₂	PhCH ₂
A-795	B-795	(2-CH ₃ O-Ph)CH ₂	PhCH ₂
A-796	B-796	(3-CH ₃ O-Ph)CH ₂	PhCH ₂
A-797	B-797	(4-CH ₃ O-Ph)CH ₂	PhCH ₂
A-798	B-798	HO	PhCH ₂
A-799	B-799	CH ₃ O	PhCH ₂
A-800	B-800	CH ₃ CH ₂ O	PhCH ₂
A-801	B-801	n-C ₃ H ₇ O	PhCH ₂
A-802	B-802	iso-C ₃ H ₇ O	PhCH ₂
A-803	B-803	CH ₂ =CHCH ₂ O	PhCH ₂
A-804	B-804	CHCCH ₂ O	PhCH ₂
A-805	B-805	PhCH ₂ O	PhCH ₂
A-806	B-806	PhO	PhCH ₂
A-807	B-807	NH ₂	PhCH ₂
A-808	B-808	CH ₃ NH	PhCH ₂
A-809	B-809	C ₂ H ₅ NH	PhCH ₂
A-810	B-810	n-C ₃ H ₇ NH	PhCH ₂
A-811	B-811	iso-C ₃ H ₇ NH	PhCH ₂
A-812	B-812	PhCH ₂ NH	PhCH ₂
A-813	B-813	PhNH	PhCH ₂
A-814	B-814	2-Cl-PhNH	PhCH ₂
A-815	B-815	3-Cl-PhNH	PhCH ₂
A-816	B-816	4-Cl-PhNH	PhCH ₂
A-817	B-817	2-CF ₃ -PhNH	PhCH ₂
A-818	B-818	3-CF ₃ -PhNH	PhCH ₂
A-819	B-819	2-CH ₃ O-PhNH	PhCH ₂
A-820	B-820	3-CH ₃ O-PhNH	PhCH ₂
A-821	B-821	4-CH ₃ O-PhNH	PhCH ₂
A-822	B-822	Ph	PhCH ₂
A-823	B-823	2-Cl-Ph	PhCH ₂
A-824	B-824	3-Cl-Ph	PhCH ₂
A-825	B-825	4-Cl-Ph	PhCH ₂
A-826	B-826	2-CF ₃ -Ph	PhCH ₂
A-827	B-827	3-CF ₃ -Ph	PhCH ₂

Compound		R ³	R ⁴
A-828	B-828	4-CF ₃ -Ph	PhCH ₂
A-829	B-829	2-CH ₃ O-Ph	PhCH ₂
A-830	B-830	3-CH ₃ O-Ph	PhCH ₂
A-831	B-831	4-CH ₃ O-Ph	PhCH ₂
A-832	B-832	2-HO-Ph	PhCH ₂
A-833	B-833	3-HO-Ph	PhCH ₂
A-834	B-834	4-HO-Ph	PhCH ₂
A-835	B-835	2-NH ₂ -Ph	PhCH ₂
A-836	B-836	3-NH ₂ -Ph	PhCH ₂
A-837	B-837	4-NH ₂ -Ph	PhCH ₂
A-838	B-838	2-HOCH ₂ -Ph	PhCH ₂
A-839	B-839	4-CF ₃ O-Ph	PhCH ₂
A-840	B-840	4-CF ₃ CH ₂ O-Ph	PhCH ₂
A-841	B-841	4-(4-Cl-PhO)-Ph	PhCH ₂
A-842	B-842	4-(4-CF ₃ -PhO)-Ph	PhCH ₂
A-843	B-843	2,3-diCl-Ph	PhCH ₂
A-844	B-844	1-Pyrrolyl	PhCH ₂
A-845	B-845	1-Pyrazolyl	PhCH ₂
A-846	B-846	1,2,4-Triazol-1-yl	PhCH ₂
A-847	B-847	2-Thiazolyl	PhCH ₂
A-848	B-848	1,3,4-Thiadiazol-2-yl	PhCH ₂
A-849	B-849	CH ₃ CO	PhCH ₂
A-850	B-850	PhCO	PhCH ₂
A-851	B-851	PhSO ₂ NH	PhCH ₂
A-852	B-852	CF ₃ CH ₂	PhCH ₂
A-853	B-853	ClCH ₂ CH ₂	PhCH ₂
A-854	B-854	ClCH ₂ CH ₂ CH ₂	PhCH ₂
A-855	B-855	CH ₃ OCH ₂ CH ₂	PhCH ₂
A-856	B-856	CH ₃ CH ₂ OCH ₂ CH ₂	PhCH ₂
A-857	B-857	CH ₃ OCH ₂ CH ₂ CH ₂	PhCH ₂
A-858	B-858	C ₂ H ₅ OCH ₂ CH ₂ CH ₂	PhCH ₂
A-859	B-859	n-C ₄ H ₉ OCH ₂ CH ₂ CH ₂	PhCH ₂
A-860	B-860	(CH ₃ O) ₂ CHCH ₂	PhCH ₂
A-861	B-861	CH(CH ₃)CH ₂ CH ₂ CH ₂ CH ₂	
A-862	B-862	HOCH ₂ CH ₂	PhCH ₂
A-863	B-863	CH ₂ CHBrCH ₂ CH ₂	
A-864	B-864	CH ₂ CH(OH)CH ₂ CH ₂	
A-865	B-865	CH ₂ CH=CHCH ₂	
A-866	B-866	benzothiazol-2-yl	H
A-867	B-867	Ph	Ph
A-868	B-868	CH ₃ CONH	Ph
A-869	B-869	HOCH ₂ CH ₂	Ph
A-870	B-870	CH ₃ SO ₂ OCH ₂ CH ₂ CH ₂ CH ₂	H

Compound		R ³	R ⁴
A-871	B-871	CH ₂ CH ₂ CH ₂ CH ₂	
A-872	B-872	CH ₂ CH ₂ CH ₂ CH ₂ CH ₂	
A-873	B-873	CH ₂ CH ₂ OCH ₂ CH ₂	
A-874	B-874	CH ₂ CH ₂ SCH ₂ CH ₂	
A-875	B-875	CH ₂ CH ₂ NHCH ₂ CH ₂	
A-876	B-876	CH ₂ CH ₂ N(CH ₃)CH ₂ CH ₂	
A-877	B-877	N=CHCH ₂ CH ₂	
A-878	B-878	Ph	NH ₂
A-879	B-879	PhCH ₂	(CH ₃) ₂ C=N
A-880	B-880	Ph	(CH ₃) ₂ C=N
A-881	B-881	PhCH ₂	H

Table 2

Compounds of formula (I) in which R¹ is -C(=U)NR³R⁴; U is O, m is zero and R² is as defined hereafter. In Table 2 compounds C-1 to C-151 represent individual compounds in which R² is methyl; compounds D-1 to D-151 represent individual compounds in which R² is ethyl; compounds E-1 to E-151 represent individual compounds in which R² is allyl; compounds F-1 to F-151 represent individual compounds in which R² is propargyl; compounds G-1 to G-151 represent individual compounds in which R² is benzyl; compounds H-1 to H-151 represent individual compounds in which R² is -CH₂CO₂CH₃; compounds I-1 to I-151 represent individual compounds in which R² is -CH(CH₃)CO₂CH₃; compounds J-1 to J-151 represent individual compounds in which R² is -CH₂CH(OCH₃)₂.

Compound										R ³	R ⁴
C-1	D-1	E-1	F-1	G-1	H-1	I-1	J-1			CH ₂ =CHCH ₂	H
C-2	D-2	E-2	F-2	G-2	H-2	I-2	J-2			CH ₃ CH=CHCH ₂	H
C-3	D-3	E-3	F-3	G-3	H-3	I-3	J-3			CH ₂ =CHCH ₂ CH ₂	H
C-4	D-4	E-4	F-4	G-4	H-4	I-4	J-4			CHCCH ₂	H
C-5	D-5	E-5	F-5	G-5	H-5	I-5	J-5			CH ₃ CCCH ₂	H
C-6	D-6	E-6	F-6	G-6	H-6	I-6	J-6			CHCCH(CH ₃)	H
C-7	D-7	E-7	F-7	G-7	H-7	I-7	J-7			cyclo-C ₃ H ₅	H
C-8	D-8	E-8	F-8	G-8	H-8	I-8	J-8			cyclo-C ₅ H ₉	H
C-9	D-9	E-9	F-9	G-9	H-9	I-9	J-9			cyclo-C ₆ H ₁₁	H
C-10	D-10	E-10	F-10	G-10	H-10	I-10	J-10			PhCH ₂	H
C-11	D-11	E-11	F-11	G-11	H-11	I-11	J-11			PhCH(CH ₃)	H
C-12	D-12	E-12	F-12	G-12	H-12	I-12	J-12			NH ₂	H
C-13	D-13	E-13	F-13	G-13	H-13	I-13	J-13			CH ₃ NH	H
C-14	D-14	E-14	F-14	G-14	H-14	I-14	J-14			C ₂ H ₅ NH	H
C-15	D-15	E-15	F-15	G-15	H-15	I-15	J-15			n-C ₃ H ₇ NH	H
C-16	D-16	E-16	F-16	G-16	H-16	I-16	J-16			iso-C ₃ H ₇ NH	H
C-17	D-17	E-17	F-17	G-17	H-17	I-17	J-17			n-C ₄ H ₉ NH	H
C-18	D-18	E-18	F-18	G-18	H-18	I-18	J-18			tert-C ₄ H ₉ NH	H
C-19	D-19	E-19	F-19	G-19	H-19	I-19	J-19			n-C ₅ H ₁₁ NH	H
C-20	D-20	E-20	F-20	G-20	H-20	I-20	J-20			n-C ₆ H ₁₃ NH	H
C-21	D-21	E-21	F-21	G-21	H-21	I-21	J-21			PhCH ₂ NH	H
C-22	D-22	E-22	F-22	G-22	H-22	I-22	J-22			PhNH	H
C-23	D-23	E-23	F-23	G-23	H-23	I-23	J-23			HO	H
C-24	D-24	E-24	F-24	G-24	H-24	I-24	J-24			CH ₃ O	H
C-25	D-25	E-25	F-25	G-25	H-25	I-25	J-25			C ₂ H ₅ O	H

Compound										R ³	R ⁴
C-26	D-26	E-26	F-26	G-26	H-26	I-26	J-26			n-C3H7O	H
C-27	D-27	E-27	F-27	G-27	H-27	I-27	J-27			iso-C3H7O	H
C-28	D-28	E-28	F-28	G-28	H-28	I-28	J-28			n-C4H9O	H
C-29	D-29	E-29	F-29	G-29	H-29	I-29	J-29			tert-C4H9O	H
C-30	D-30	E-30	F-30	G-30	H-30	I-30	J-30			CH ₂ =CHCH ₂ O	H
C-31	D-31	E-31	F-31	G-31	H-31	I-31	J-31			CHCCH ₂ O	H
C-32	D-32	E-32	F-32	G-32	H-32	I-32	J-32			CH ₃ O ₂ CCH ₂ O	H
C-33	D-33	E-33	F-33	G-33	H-33	I-33	J-33			CH ₃ O ₂ CCH(CH ₃)O	H
C-34	D-34	E-34	F-34	G-34	H-34	I-34	J-34			CH ₃ O ₂ CC(CH ₃) ₂ O	H
C-35	D-35	E-35	F-35	G-35	H-35	I-35	J-35			PhCH ₂ O	H
C-36	D-36	E-36	F-36	G-36	H-36	I-36	J-36			Ph	H
C-37	D-37	E-37	F-37	G-37	H-37	I-37	J-37			2-F-Ph	H
C-38	D-38	E-38	F-38	G-38	H-38	I-38	J-38			3-F-Ph	H
C-39	D-39	E-39	F-39	G-39	H-39	I-39	J-39			4-F-Ph	H
C-40	D-40	E-40	F-40	G-40	H-40	I-40	J-40			2-Cl-Ph	H
C-41	D-41	E-41	F-41	G-41	H-41	I-41	J-41			3-Cl-Ph	H
C-42	D-42	E-42	F-42	G-42	H-42	I-42	J-42			4-Cl-Ph	H
C-43	D-43	E-43	F-43	G-43	H-43	I-43	J-43			2-CF ₃ -Ph	H
C-44	D-44	E-44	F-44	G-44	H-44	I-44	J-44			3-CF ₃ -Ph	H
C-45	D-45	E-45	F-45	G-45	H-45	I-45	J-45			4-CF ₃ -Ph	H
C-46	D-46	E-46	F-46	G-46	H-46	I-46	J-46			2-CH ₃ -Ph	H
C-47	D-47	E-47	F-47	G-47	H-47	I-47	J-47			3-CH ₃ -Ph	H
C-48	D-48	E-48	F-48	G-48	H-48	I-48	J-48			4-CH ₃ -Ph	H
C-49	D-49	E-49	F-49	G-49	H-49	I-49	J-49			2-CH ₃ O-Ph	H
C-50	D-50	E-50	F-50	G-50	H-50	I-50	J-50			3-CH ₃ O-Ph	H
C-51	D-51	E-51	F-51	G-51	H-51	I-51	J-51			4-CH ₃ O-Ph	H

Compound										R ³	R ⁴
C-52	D-52	E-52	F-52	G-52	H-52	I-52	J-52			4-CF3O-Ph	H
C-53	D-53	E-53	F-53	G-53	H-53	I-53	J-53			4-CF3CH2O-Ph	H
C-54	D-54	E-54	F-54	G-54	H-54	I-54	J-54			4-PhO-Ph	H
C-55	D-55	E-55	F-55	G-55	H-55	I-55	J-55			4-(4-Cl-PhO)-Ph	H
C-56	D-56	E-56	F-56	G-56	H-56	I-56	J-56			4-(4-CF3-PhO)-Ph	H
C-57	D-57	E-57	F-57	G-57	H-57	I-57	J-57			CF3CH2	H
C-58	D-58	E-58	F-58	G-58	H-58	I-58	J-58			ClCH2CH2	H
C-59	D-59	E-59	F-59	G-59	H-59	I-59	J-59			ClCH2CH2CH2	H
C-60	D-60	E-60	F-60	G-60	H-60	I-60	J-60			CH3OCH2CH2	H
C-61	D-61	E-61	F-61	G-61	H-61	I-61	J-61			CH3CH2OCH2CH2	H
C-62	D-62	E-62	F-62	G-62	H-62	I-62	J-62			CH3OCH2CH2CH2	H
C-63	D-63	E-63	F-63	G-63	H-63	I-63	J-63			C2H5OCH2CH2CH2	H
C-64	D-64	E-64	F-64	G-64	H-64	I-64	J-64			n-C4H9OCH2CH2CH2	H
C-65	D-65	E-65	F-65	G-65	H-65	I-65	J-65			CH3OCH(CH3)CH2CH2	H
C-66	D-66	E-66	F-66	G-66	H-66	I-66	J-66			(CH3O)2CHCH2	H
C-67	D-67	E-67	F-67	G-67	H-67	I-67	J-67			HOCH2CH2	H
C-68	D-68	E-68	F-68	G-68	H-68	I-68	J-68			HOCH2CH2CH2	H
C-69	D-69	E-69	F-69	G-69	H-69	I-69	J-69			CH3SCH2CH2	H
C-70	D-70	E-70	F-70	G-70	H-70	I-70	J-70			CH3CH2SCH2CH2	H
C-71	D-71	E-71	F-71	G-71	H-71	I-71	J-71			CH3SCH2CH2CH2	H
C-72	D-72	E-72	F-72	G-72	H-72	I-72	J-72			C2H5SCH2CH2CH2	H
C-73	D-73	E-73	F-73	G-73	H-73	I-73	J-73			CH2=CHCH2	CH3
C-74	D-74	E-74	F-74	G-74	H-74	I-74	J-74			CHCCH2	CH3
C-75	D-75	E-75	F-75	G-75	H-75	I-75	J-75			cyclo-C3H5	CH3
C-76	D-76	E-76	F-76	G-76	H-76	I-76	J-76			cyclo-C5H9	CH3
C-77	D-77	E-77	F-77	G-77	H-77	I-77	J-77			cyclo-C6H11	CH3

Compound										R ³	R ⁴
C-78	D-78	E-78	F-78	G-78	H-78	I-78	J-78	J-78	J-78	PhCH ₂	CH ₃
C-79	D-79	E-79	F-79	G-79	H-79	I-79	J-79	J-79	J-79	NH ₂	CH ₃
C-80	D-80	E-80	F-80	G-80	H-80	I-80	J-80	J-80	J-80	CH ₃ NH	CH ₃
C-81	D-81	E-81	F-81	G-81	H-81	I-81	J-81	J-81	J-81	C ₂ H ₅ NH	CH ₃
C-82	D-82	E-82	F-82	G-82	H-82	I-82	J-82	J-82	J-82	PhCH ₂ NH	CH ₃
C-83	D-83	E-83	F-83	G-83	H-83	I-83	J-83	J-83	J-83	PhNH	CH ₃
C-84	D-84	E-84	F-84	G-84	H-84	I-84	J-84	J-84	J-84	HO	CH ₃
C-85	D-85	E-85	F-85	G-85	H-85	I-85	J-85	J-85	J-85	CH ₃ O	CH ₃
C-86	D-86	E-86	F-86	G-86	H-86	I-86	J-86	J-86	J-86	C ₂ H ₅ O	CH ₃
C-87	D-87	E-87	F-87	G-87	H-87	I-87	J-87	J-87	J-87	CH ₂ =CHCH ₂ O	CH ₃
C-88	D-88	E-88	F-88	G-88	H-88	I-88	J-88	J-88	J-88	CHCCH ₂ O	CH ₃
C-89	D-89	E-89	F-89	G-89	H-89	I-89	J-89	J-89	J-89	CH ₃ O ₂ CCH ₂ O	CH ₃
C-90	D-90	E-90	F-90	G-90	H-90	I-90	J-90	J-90	J-90	CH ₃ O ₂ CCH(CH ₃)O	CH ₃
C-91	D-91	E-91	F-91	G-91	H-91	I-91	J-91	J-91	J-91	PhCH ₂ O	CH ₃
C-92	D-92	E-92	F-92	G-92	H-92	I-92	J-92	J-92	J-92	Ph	CH ₃
C-93	D-93	E-93	F-93	G-93	H-93	I-93	J-93	J-93	J-93	4-CF ₃ O-Ph	CH ₃
C-94	D-94	E-94	F-94	G-94	H-94	I-94	J-94	J-94	J-94	4-(4-CF ₃ O)-Ph	CH ₃
C-95	D-95	E-95	F-95	G-95	H-95	I-95	J-95	J-95	J-95	CF ₃ CH ₂	CH ₃
C-96	D-96	E-96	F-96	G-96	H-96	I-96	J-96	J-96	J-96	CH ₃ OCH ₂ CH ₂	CH ₃
C-97	D-97	E-97	F-97	G-97	H-97	I-97	J-97	J-97	J-97	CH ₃ CH ₂ OCH ₂ CH ₂	CH ₃
C-98	D-98	E-98	F-98	G-98	H-98	I-98	J-98	J-98	J-98	CH ₃ OCH ₂ CH ₂ CH ₂	CH ₃
C-99	D-99	E-99	F-99	G-99	H-99	I-99	J-99	J-99	J-99	C ₂ H ₅ OCH ₂ CH ₂ CH ₂	CH ₃
C-100	D-100	E-100	F-100	G-100	H-100	I-100	J-100	J-100	J-100	n-C ₄ H ₉ OCH ₂ CH ₂ CH ₂	CH ₃
C-101	D-101	E-101	F-101	G-101	H-101	I-101	J-101	J-101	J-101	(CH ₃ O) ₂ CHCH ₂	CH ₃
C-102	D-102	E-102	F-102	G-102	H-102	I-102	J-102	J-102	J-102	HOCH ₂ CH ₂	CH ₃
C-103	D-103	E-103	F-103	G-103	H-103	I-103	J-103	J-103	J-103	HOCH ₂ CH ₂ CH ₂	CH ₃

Compound										R ³	R ⁴
C-104	D-104	E-104	F-104	G-104	H-104	I-104	J-104			CH ₃ OCH ₂ CH ₂ CH ₂	CH ₃
C-105	D-105	E-105	F-105	G-105	H-105	I-105	J-105			C ₂ H ₅ OCH ₂ CH ₂ CH ₂	CH ₃
C-106	D-106	E-106	F-106	G-106	H-106	I-106	J-106			n-C ₄ H ₉ OCH ₂ CH ₂ CH ₂	CH ₃
C-107	D-107	E-107	F-107	G-107	H-107	I-107	J-107			(CH ₃ O) ₂ CHCH ₂	CH ₃
C-108	D-108	E-108	F-108	G-108	H-108	I-108	J-108			HOCH ₂ CH ₂	CH ₃
C-109	D-109	E-109	F-109	G-109	H-109	I-109	J-109			HOCH ₂ CH ₂ CH ₂	CH ₃
C-110	D-110	E-110	F-110	G-110	H-110	I-110	J-110			CH ₂ =CHCH ₂	PhCH ₂
C-111	D-111	E-111	F-111	G-111	H-111	I-111	J-111			CHCCH ₂	PhCH ₂
C-112	D-112	E-112	F-112	G-112	H-112	I-112	J-112			cyclo-C ₃ H ₅	PhCH ₂
C-113	D-113	E-113	F-113	G-113	H-113	I-113	J-113			cyclo-C ₅ H ₉	PhCH ₂
C-114	D-114	E-114	F-114	G-114	H-114	I-114	J-114			cyclo-C ₆ H ₁₁	PhCH ₂
C-115	D-115	E-115	F-115	G-115	H-115	I-115	J-115			NH ₂	PhCH ₂
C-116	D-116	E-116	F-116	G-116	H-116	I-116	J-116			CH ₃ NH	PhCH ₂
C-117	D-117	E-117	F-117	G-117	H-117	I-117	J-117			C ₂ H ₅ NH	PhCH ₂
C-118	D-118	E-118	F-118	G-118	H-118	I-118	J-118			PhNH	PhCH ₂
C-119	D-119	E-119	F-119	G-119	H-119	I-119	J-119			HO	PhCH ₂
C-120	D-120	E-120	F-120	G-120	H-120	I-120	J-120			CH ₃ O	PhCH ₂
C-121	D-121	E-121	F-121	G-121	H-121	I-121	J-121			C ₂ H ₅ O	PhCH ₂
C-122	D-122	E-122	F-122	G-122	H-122	I-122	J-122			CH ₂ =CHCH ₂ O	PhCH ₂
C-123	D-123	E-123	F-123	G-123	H-123	I-123	J-123			CHCCH ₂ O	PhCH ₂
C-124	D-124	E-124	F-124	G-124	H-124	I-124	J-124			CH ₃ O ₂ CCCH ₂ O	PhCH ₂
C-125	D-125	E-125	F-125	G-125	H-125	I-125	J-125			CH ₃ O ₂ CCCH(CH ₃)O	PhCH ₂
C-126	D-126	E-126	F-126	G-126	H-126	I-126	J-126			PhCH ₂ O	PhCH ₂
C-127	D-127	E-127	F-127	G-127	H-127	I-127	J-127			Ph	PhCH ₂
C-128	D-128	E-128	F-128	G-128	H-128	I-128	J-128			4-CF ₃ O-Ph	PhCH ₂
C-129	D-129	E-129	F-129	G-129	H-129	I-129	J-129			4-(4-CF ₃ O)-Ph	PhCH ₂

Compound										R ³	R ⁴
C-130	D-130	E-130	F-130	G-130	H-130	I-130	J-130			CF ₃ CH ₂	PhCH ₂
C-131	D-131	E-131	F-131	G-131	H-131	I-131	J-131			CH ₃ OCH ₂ CH ₂	PhCH ₂
C-132	D-132	E-132	F-132	G-132	H-132	I-132	J-132			CH ₃ CH ₂ OCH ₂ CH ₂	PhCH ₂
C-133	D-133	E-133	F-133	G-133	H-133	I-133	J-133			CH ₃ OCH ₂ CH ₂ CH ₂	PhCH ₂
C-134	D-134	E-134	F-134	G-134	H-134	I-134	J-134			C ₂ H ₅ OCH ₂ CH ₂ CH ₂	PhCH ₂
C-135	D-135	E-135	F-135	G-135	H-135	I-135	J-135			n-C ₄ H ₉ OCH ₂ CH ₂ CH ₂	PhCH ₂
C-136	D-136	E-136	F-136	G-136	H-136	I-136	J-136			(CH ₃ O) ₂ CHCH ₂	PhCH ₂
C-137	D-137	E-137	F-137	G-137	H-137	I-137	J-137			HOCH ₂ CH ₂	PhCH ₂
C-138	D-138	E-138	F-138	G-138	H-138	I-138	J-138			HOCH ₂ CH ₂ CH ₂	PhCH ₂
C-139	D-139	E-139	F-139	G-139	H-139	I-139	J-139			CH ₃ OCH ₂ CH ₂ CH ₂	PhCH ₂
C-140	D-140	E-140	F-140	G-140	H-140	I-140	J-140			C ₂ H ₅ OCH ₂ CH ₂ CH ₂	PhCH ₂
C-141	D-141	E-141	F-141	G-141	H-141	I-141	J-141			n-C ₄ H ₉ OCH ₂ CH ₂ CH ₂	PhCH ₂
C-142	D-142	E-142	F-142	G-142	H-142	I-142	J-142			(CH ₃ O) ₂ CHCH ₂	PhCH ₂
C-143	D-143	E-143	F-143	G-143	H-143	I-143	J-143			HOCH ₂ CH ₂	PhCH ₂
C-144	D-144	E-144	F-144	G-144	H-144	I-144	J-144			HOCH ₂ CH ₂ CH ₂	PhCH ₂
C-145	D-145	E-145	F-145	G-145	H-145	I-145	J-145			CH ₂ CH ₂ CH ₂ CH ₂	
C-146	D-146	E-146	F-146	G-146	H-146	I-146	J-146			CH ₂ CH ₂ CH ₂ CH ₂ CH ₂	
C-147	D-147	E-147	F-147	G-147	H-147	I-147	J-147			CH ₂ CH ₂ OCH ₂ CH ₂	
C-148	D-148	E-148	F-148	G-148	H-148	I-148	J-148			CH ₂ CH ₂ SCCH ₂ CH ₂	
C-149	D-149	E-149	F-149	G-149	H-149	I-149	J-149			CH ₂ CH ₂ NHCH ₂ CH ₂	
C-150	D-150	E-150	F-150	G-150	H-150	I-150	J-150			CH ₂ CH ₂ N(CH ₃)CH ₂ CH ₂	
C-151	D-151	E-151	F-151	G-151	H-151	I-151	J-151			N=CHCH ₂ CH ₂	

Table 3

Compounds of formula (I) in which R^1 is $-C(=U)NR^3R^4$; U is S and m is zero. In Table 3 compounds K-1 to K-151 represent individual compounds in which R^2 is methyl; compounds L-1 to L-151 represent individual compounds in which R^2 is ethyl; 5 compounds M-1 to M-151 represent individual compounds in which R^2 is allyl; compounds N-1 to N-151 represent individual compounds in which R^2 is propargyl; compounds O-1 to O-151 represent individual compounds in which R^2 is benzyl; compounds P-1 to P-151 represent individual compounds in which R^2 is 10 $-CH_2CO_2CH_3$; compounds Q-1 to Q-151 represent individual compounds in which R^2 is $-CH(CH_3)CO_2CH_3$; compounds R-1 to R-151 represent individual compounds in which R^2 is $-CH_2CH(OCH_3)_2$.

Compound										R ³	R ⁴
K-1	L-1	M-1	N-1	O-1	P-1	Q-1	R-1	CH ₂ =CHCH ₂		H	H
K-2	L-2	M-2	N-2	O-2	P-2	Q-2	R-2	CH ₃ CH=CHCH ₂		H	H
K-3	L-3	M-3	N-3	O-3	P-3	Q-3	R-3	CH ₂ =CHCH ₂ CH ₂		H	H
K-4	L-4	M-4	N-4	O-4	P-4	Q-4	R-4	CHCCH ₂		H	H
K-5	L-5	M-5	N-5	O-5	P-5	Q-1	R-5	CH ₃ CCCCH ₂		H	H
K-6	L-6	M-6	N-6	O-6	P-6	Q-2	R-6	CHCCH(CH ₃)		H	H
K-7	L-7	M-7	N-7	O-7	P-7	Q-3	R-7	cyclo-C ₃ H ₅		H	H
K-8	L-8	M-8	N-8	O-8	P-8	Q-4	R-8	cyclo-C ₅ H ₉		H	H
K-9	L-9	M-9	N-9	O-9	P-9	Q-1	R-9	cyclo-C ₆ H ₁₁		H	H
K-10	L-10	M-10	N-10	O-10	P-10	Q-2	R-10	PhCH ₂		H	H
K-11	L-11	M-11	N-11	O-11	P-11	Q-3	R-11	PhCH(CH ₃)		H	H
K-12	L-12	M-12	N-12	O-12	P-12	Q-4	R-12	NH ₂		H	H
K-13	L-13	M-13	N-13	O-13	P-13	Q-1	R-13	CH ₃ NH		H	H
K-14	L-14	M-14	N-14	O-14	P-14	Q-2	R-14	C ₂ H ₅ NH		H	H
K-15	L-15	M-15	N-15	O-15	P-15	Q-3	R-15	n-C ₃ H ₇ NH		H	H
K-16	L-16	M-16	N-16	O-16	P-16	Q-4	R-16	iso-C ₃ H ₇ NH		H	H
K-17	L-17	M-17	N-17	O-17	P-17	Q-1	R-17	n-C ₄ H ₉ NH		H	H
K-18	L-18	M-18	N-18	O-18	P-18	Q-2	R-18	tert-C ₄ H ₉ NH		H	H
K-19	L-19	M-19	N-19	O-19	P-19	Q-3	R-19	n-C ₅ H ₁₁ NH		H	H
K-20	L-20	M-20	N-20	O-20	P-20	Q-4	R-20	n-C ₆ H ₁₃ NH		H	H
K-21	L-21	M-21	N-21	O-21	P-21	Q-1	R-21	PhCH ₂ NH		H	H
K-22	L-22	M-22	N-22	O-22	P-22	Q-2	R-22	PhNH		H	H
K-23	L-23	M-23	N-23	O-23	P-23	Q-3	R-23	HO		H	H
K-24	L-24	M-24	N-24	O-24	P-24	Q-4	R-24	CH ₃ O		H	H
K-25	L-25	M-25	N-25	O-25	P-25	Q-1	R-25	C ₂ H ₅ O		H	H

Compound										R ³	R ⁴
K-26	L-26	M-26	N-26	O-26	P-26	Q-2	R-26	n-C3H7O			H
K-27	L-27	M-27	N-27	O-27	P-27	Q-3	R-27	iso-C3H7O			H
K-28	L-28	M-28	N-28	O-28	P-28	Q-4	R-28	n-C4H9O			H
K-29	L-29	M-29	N-29	O-29	P-29	Q-1	R-29	tert-C4H9O			H
K-30	L-30	M-30	N-30	O-30	P-30	Q-2	R-30	CH2=CHCH2O			H
K-31	L-31	M-31	N-31	O-31	P-31	Q-3	R-31	CHCCH2O			H
K-32	L-32	M-32	N-32	O-32	P-32	Q-4	R-32	CH3O2CCH2O			H
K-33	L-33	M-33	N-33	O-33	P-33	Q-1	R-33	CH3O2CCH(CH3)O			H
K-34	L-34	M-34	N-34	O-34	P-34	Q-2	R-34	CH3O2CC(CH3)2O			H
K-35	L-35	M-35	N-35	O-35	P-35	Q-3	R-35	PhCH2O			H
K-36	L-36	M-36	N-36	O-36	P-36	Q-4	R-36	Ph			H
K-37	L-37	M-37	N-37	O-37	P-37	Q-1	R-37	2-F-Ph			H
K-38	L-38	M-38	N-38	O-38	P-38	Q-2	R-38	3-F-Ph			H
K-39	L-39	M-39	N-39	O-39	P-39	Q-3	R-39	4-F-Ph			H
K-40	L-40	M-40	N-40	O-40	P-40	Q-4	R-40	2-Cl-Ph			H
K-41	L-41	M-41	N-41	O-41	P-41	Q-1	R-41	3-Cl-Ph			H
K-42	L-42	M-42	N-42	O-42	P-42	Q-2	R-42	4-Cl-Ph			H
K-43	L-43	M-43	N-43	O-43	P-43	Q-3	R-43	2-CF3-Ph			H
K-44	L-44	M-44	N-44	O-44	P-44	Q-4	R-44	3-CF3-Ph			H
K-45	L-45	M-45	N-45	O-45	P-45	Q-1	R-45	4-CF3-Ph			H
K-46	L-46	M-46	N-46	O-46	P-46	Q-2	R-46	2-CH3-Ph			H
K-47	L-47	M-47	N-47	O-47	P-47	Q-3	R-47	3-CH3-Ph			H
K-48	L-48	M-48	N-48	O-48	P-48	Q-4	R-48	4-CH3-Ph			H
K-49	L-49	M-49	N-49	O-49	P-49	Q-1	R-49	2-CH3O-Ph			H
K-50	L-50	M-50	N-50	O-50	P-50	Q-2	R-50	3-CH3O-Ph			H
K-51	L-51	M-51	N-51	O-51	P-51	Q-3	R-51	4-CH3O-Ph			H

Compound								R ³	R ⁴
K-52	L-52	M-52	N-52	O-52	P-52	Q-4	R-52	4-CF3O-Ph	H
K-53	L-53	M-53	N-53	O-53	P-53	Q-1	R-53	4-CF3CH2O-Ph	H
K-54	L-54	M-54	N-54	O-54	P-54	Q-2	R-54	4-PhO-Ph	H
K-55	L-55	M-55	N-55	O-55	P-55	Q-3	R-55	4-(4-Cl-PhO)-Ph	H
K-56	L-56	M-56	N-56	O-56	P-56	Q-4	R-56	4-(4-CF3-PhO)-Ph	H
K-57	L-57	M-57	N-57	O-57	P-57	Q-1	R-57	CF3CH2	H
K-58	L-58	M-58	N-58	O-58	P-58	Q-2	R-58	ClCH2CH2	H
K-59	L-59	M-59	N-59	O-59	P-59	Q-3	R-59	ClCH2CH2CH2	H
K-60	L-60	M-60	N-60	O-60	P-60	Q-4	R-60	CH3OCH2CH2	H
K-61	L-61	M-61	N-61	O-61	P-61	Q-1	R-61	CH3CH2OCH2CH2	H
K-62	L-62	M-62	N-62	O-62	P-62	Q-2	R-62	CH3OCH2CH2CH2	H
K-63	L-63	M-63	N-63	O-63	P-63	Q-3	R-63	C2H5OCH2CH2CH2	H
K-64	L-64	M-64	N-64	O-64	P-64	Q-4	R-64	n-C4H9OCH2CH2CH2	H
K-65	L-65	M-65	N-65	O-65	P-65	Q-1	R-65	CH3OCH(CH3)CH2CH2	H
K-66	L-66	M-66	N-66	O-66	P-66	Q-2	R-66	(CH3O)2CHCH2	H
K-67	L-67	M-67	N-67	O-67	P-67	Q-3	R-67	HOCH2CH2	H
K-68	L-68	M-68	N-68	O-68	P-68	Q-4	R-68	HOCH2CH2CH2	H
K-69	L-69	M-69	N-69	O-69	P-69	Q-1	R-69	CH3SCH2CH2	H
K-70	L-70	M-70	N-70	O-70	P-70	Q-2	R-70	CH3CH2SCH2CH2	H
K-71	L-71	M-71	N-71	O-71	P-71	Q-3	R-71	CH3SCH2CH2CH2	H
K-72	L-72	M-72	N-72	O-72	P-72	Q-4	R-72	C2H5SCH2CH2CH2	H
K-73	L-73	M-73	N-73	O-73	P-73	Q-1	R-73	CH2=CHCH2	CH3
K-74	L-74	M-74	N-74	O-74	P-74	Q-2	R-74	CHCCH2	CH3
K-75	L-75	M-75	N-75	O-75	P-75	Q-3	R-75	cyclo-C3H5	CH3
K-76	L-76	M-76	N-76	O-76	P-76	Q-4	R-76	cyclo-C5H9	CH3
K-77	L-77	M-77	N-77	O-77	P-77	Q-1	R-77	cyclo-C6H11	CH3

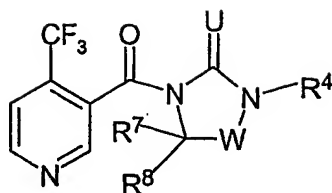
Compound										R ³	R ⁴
K-78	L-78	M-78	N-78	O-78	P-78	Q-2	R-78	PhCH ₂			CH ₃
K-79	L-79	M-79	N-79	O-79	P-79	Q-3	R-79	NH ₂			CH ₃
K-80	L-80	M-80	N-80	O-80	P-80	Q-4	R-80	CH ₃ NH			CH ₃
K-81	L-81	M-81	N-81	O-81	P-81	Q-1	R-81	C ₂ H ₅ NH			CH ₃
K-82	L-82	M-82	N-82	O-82	P-82	Q-2	R-82	PhCH ₂ NH			CH ₃
K-83	L-83	M-83	N-83	O-83	P-83	Q-3	R-83	PhNH			CH ₃
K-84	L-84	M-84	N-84	O-84	P-84	Q-4	R-84	HO			CH ₃
K-85	L-85	M-85	N-85	O-85	P-85	Q-1	R-85	CH ₃ O			CH ₃
K-86	L-86	M-86	N-86	O-86	P-86	Q-2	R-86	C ₂ H ₅ O			CH ₃
K-87	L-87	M-87	N-87	O-87	P-87	Q-3	R-87	CH ₂ =CHCH ₂ O			CH ₃
K-88	L-88	M-88	N-88	O-88	P-88	Q-4	R-88	CHCCH ₂ O			CH ₃
K-89	L-89	M-89	N-89	O-89	P-89	Q-1	R-89	CH ₃ O ₂ CCH ₂ O			CH ₃
K-90	L-90	M-90	N-90	O-90	P-90	Q-2	R-90	CH ₃ O ₂ CCH(CH ₃)O			CH ₃
K-91	L-91	M-91	N-91	O-91	P-91	Q-3	R-91	PhCH ₂ O			CH ₃
K-92	L-92	M-92	N-92	O-92	P-92	Q-4	R-92	Ph			CH ₃
K-93	L-93	M-93	N-93	O-93	P-93	Q-1	R-93	4-CF ₃ O-Ph			CH ₃
K-94	L-94	M-94	N-94	O-94	P-94	Q-2	R-94	4-(4-CF ₃ O)-Ph			CH ₃
K-95	L-95	M-95	N-95	O-95	P-95	Q-3	R-95	CF ₃ CH ₂			CH ₃
K-96	L-96	M-96	N-96	O-96	P-96	Q-4	R-96	CH ₃ OCH ₂ CH ₂			CH ₃
K-97	L-97	M-97	N-97	O-97	P-97	Q-1	R-97	CH ₃ CH ₂ OCH ₂ CH ₂			CH ₃
K-98	L-98	M-98	N-98	O-98	P-98	Q-2	R-98	CH ₃ OCH ₂ CH ₂ CH ₂			CH ₃
K-99	L-99	M-99	N-99	O-99	P-99	Q-3	R-99	C ₂ H ₅ OCH ₂ CH ₂ CH ₂			CH ₃
K-100	L-100	M-100	N-100	O-100	P-100	Q-4	R-100	n-C ₄ H ₉ OCH ₂ CH ₂ CH ₂			CH ₃
K-101	L-101	M-101	N-101	O-101	P-101	Q-1	R-101	(CH ₃ O) ₂ CHCH ₂			CH ₃
K-102	L-102	M-102	N-102	O-102	P-102	Q-2	R-102	HOCH ₂ CH ₂			CH ₃
K-103	L-103	M-103	N-103	O-103	P-103	Q-3	R-103	HOCH ₂ CH ₂ CH ₂			CH ₃

Compound							R ³	R ⁴	
K-104	L-104	M-104	N-104	O-104	P-104	Q-4	R-104	CH3OCH2CH2CH2	CH3
K-105	L-105	M-105	N-105	O-105	P-105	Q-1	R-105	C2H5OCH2CH2CH2	CH3
K-106	L-106	M-106	N-106	O-106	P-106	Q-2	R-106	n-C4H9OCH2CH2CH2	CH3
K-107	L-107	M-107	N-107	O-107	P-107	Q-3	R-107	(CH3O)2CHCH2	CH3
K-108	L-108	M-108	N-108	O-108	P-108	Q-4	R-108	HOCH2CH2	CH3
K-109	L-109	M-109	N-109	O-109	P-109	Q-1	R-109	HOCH2CH2CH2	CH3
K-110	L-110	M-110	N-110	O-110	P-110	Q-2	R-110	CH2=CHCH2	PhCH2
K-111	L-111	M-111	N-111	O-111	P-111	Q-3	R-111	CHCCH2	PhCH2
K-112	L-112	M-112	N-112	O-112	P-112	Q-4	R-112	cyclo-C3H5	PhCH2
K-113	L-113	M-113	N-113	O-113	P-113	Q-1	R-113	cyclo-C5H9	PhCH2
K-114	L-114	M-114	N-114	O-114	P-114	Q-2	R-114	cyclo-C6H11	PhCH2
K-115	L-115	M-115	N-115	O-115	P-115	Q-3	R-115	NH2	PhCH2
K-116	L-116	M-116	N-116	O-116	P-116	Q-4	R-116	CH3NH	PhCH2
K-117	L-117	M-117	N-117	O-117	P-117	Q-1	R-117	C2H5NH	PhCH2
K-118	L-118	M-118	N-118	O-118	P-118	Q-2	R-118	PhNH	PhCH2
K-119	L-119	M-119	N-119	O-119	P-119	Q-3	R-119	HO	PhCH2
K-120	L-120	M-120	N-120	O-120	P-120	Q-4	R-120	CH3O	PhCH2
K-121	L-121	M-121	N-121	O-121	P-121	Q-1	R-121	C2H5O	PhCH2
K-122	L-122	M-122	N-122	O-122	P-122	Q-2	R-122	CH2=CHCH2O	PhCH2
K-123	L-123	M-123	N-123	O-123	P-123	Q-3	R-123	CHCCH2O	PhCH2
K-124	L-124	M-124	N-124	O-124	P-124	Q-4	R-124	CH3O2CCCH2O	PhCH2
K-125	L-125	M-125	N-125	O-125	P-125	Q-1	R-125	CH3O2CCH(CH3)O	PhCH2
K-126	L-126	M-126	N-126	O-126	P-126	Q-2	R-126	PhCH2O	PhCH2
K-127	L-127	M-127	N-127	O-127	P-127	Q-3	R-127	Ph	PhCH2
K-128	L-128	M-128	N-128	O-128	P-128	Q-4	R-128	4-CF3O-Ph	PhCH2
K-129	L-129	M-129	N-129	O-129	P-129	Q-1	R-129	4-(4-CF3O)-Ph	PhCH2

Compound										R ³	R ⁴
K-130	L-130	M-130	N-130	O-130	P-130	Q-2	R-130	Q-2	R-130	CF ₃ CH ₂	PhCH ₂
K-131	L-131	M-131	N-131	O-131	P-131	Q-3	R-131	Q-3	R-131	CH ₃ OCH ₂ CH ₂	PhCH ₂
K-132	L-132	M-132	N-132	O-132	P-132	Q-4	R-132	Q-4	R-132	CH ₃ CH ₂ OCH ₂ CH ₂	PhCH ₂
K-133	L-133	M-133	N-133	O-133	P-133	Q-1	R-133	Q-1	R-133	CH ₃ OCH ₂ CH ₂ CH ₂	PhCH ₂
K-134	L-134	M-134	N-134	O-134	P-134	Q-2	R-134	Q-2	R-134	C ₂ H ₅ OCH ₂ CH ₂ CH ₂	PhCH ₂
K-135	L-135	M-135	N-135	O-135	P-135	Q-3	R-135	Q-3	R-135	n-C ₄ H ₉ OCH ₂ CH ₂ CH ₂	PhCH ₂
K-136	L-136	M-136	N-136	O-136	P-136	Q-4	R-136	Q-4	R-136	(CH ₃ O) ₂ CHCH ₂	PhCH ₂
K-137	L-137	M-137	N-137	O-137	P-137	Q-1	R-137	Q-1	R-137	HOCH ₂ CH ₂	PhCH ₂
K-138	L-138	M-138	N-138	O-138	P-138	Q-2	R-138	Q-2	R-138	HOCH ₂ CH ₂ CH ₂	PhCH ₂
K-139	L-139	M-139	N-139	O-139	P-139	Q-3	R-139	Q-3	R-139	CH ₃ OCH ₂ CH ₂ CH ₂	PhCH ₂
K-140	L-140	M-140	N-140	O-140	P-140	Q-4	R-140	Q-4	R-140	C ₂ H ₅ OCH ₂ CH ₂ CH ₂	PhCH ₂
K-141	L-141	M-141	N-141	O-141	P-141	Q-1	R-141	Q-1	R-141	n-C ₄ H ₉ OCH ₂ CH ₂ CH ₂	PhCH ₂
K-142	L-142	M-142	N-142	O-142	P-142	Q-2	R-142	Q-2	R-142	(CH ₃ O) ₂ CHCH ₂	PhCH ₂
K-143	L-143	M-143	N-143	O-143	P-143	Q-3	R-143	Q-3	R-143	HOCH ₂ CH ₂	PhCH ₂
K-144	L-144	M-144	N-144	O-144	P-144	Q-4	R-144	Q-4	R-144	HOCH ₂ CH ₂ CH ₂	PhCH ₂
K-145	L-145	M-145	N-145	O-145	P-145	Q-1	R-145	Q-1	R-145	CH ₂ CH ₂ CH ₂ CH ₂ CH ₂	
K-146	L-146	M-146	N-146	O-146	P-146	Q-2	R-146	Q-2	R-146	CH ₂ CH ₂ CH ₂ CH ₂ CH ₂	
K-147	L-147	M-147	N-147	O-147	P-147	Q-3	R-147	Q-3	R-147	CH ₂ CH ₂ OCH ₂ CH ₂	
K-148	L-148	M-148	N-148	O-148	P-148	Q-4	R-148	Q-4	R-148	CH ₂ CH ₂ SCCH ₂ CH ₂	
K-149	L-149	M-149	N-149	O-149	P-149	Q-1	R-149	Q-1	R-149	CH ₂ CH ₂ NHCH ₂ CH ₂	
K-150	L-150	M-150	N-150	O-150	P-150	Q-2	R-150	Q-2	R-150	CH ₂ CH ₂ N(CH ₃)CH ₂ CH ₂	
K-151	L-151	M-151	N-151	O-151	P-151	Q-3	R-151	Q-3	R-151	N=CHCH ₂ CH ₂	

Table 4

Compounds of formula (IA):



(IA)

Compound	U	R ⁷	R ⁸	W	R ⁴
S-1	O	H	H	CH ₂	H
S-2	O	H	H	CH ₂	n-C ₃ H ₇
S-3	O	H	H	CH ₂	iso-C ₃ H ₇
S-4	O	H	H	CH ₂	n-C ₄ H ₉
S-5	O	H	H	CH ₂	iso-C ₄ H ₉
S-6	O	H	H	CH ₂	sec-C ₄ H ₉
S-7	O	H	H	CH ₂	tert-C ₄ H ₉
S-8	O	H	H	CH ₂	n-C ₅ H ₁₁
S-9	O	H	H	CH ₂	n-C ₆ H ₁₃
S-10	O	H	H	CH ₂	cyclo-C ₃ H ₅
S-11	O	H	H	CH ₂	cyclo-C ₅ H ₉
S-12	O	H	H	CH ₂	cyclo-C ₆ H ₁₁
S-13	O	H	H	CH ₂	CH ₂ =CHCH ₂
S-14	O	H	H	CH ₂	CHCCH ₂
S-15	O	H	H	CH ₂	PhCH ₂
S-16	O	H	H	CH ₂	Ph(CH ₃)CH
S-17	O	H	H	CH ₂	Ph(CH ₃) ₂ C
S-18	O	H	H	CH ₂	Ph
S-19	O	H	H	CH ₂	2-Cl-Ph
S-20	O	H	H	CH ₂	3-Cl-Ph
S-21	O	H	H	CH ₂	4-Cl-Ph
S-22	O	H	H	CH ₂	4-CF ₃ O-Ph
S-23	O	H	H	CH ₂	4-(4-CF ₃ -PhO)-Ph
S-24	O	CH ₃	H	CH ₂	C ₂ H ₅
S-25	O	CH ₃	H	CH ₂	n-C ₃ H ₇
S-26	O	CH ₃	H	CH ₂	iso-C ₃ H ₇
S-27	O	CH ₃	H	CH ₂	n-C ₄ H ₉
S-28	O	CH ₃	H	CH ₂	iso-C ₄ H ₉
S-29	O	CH ₃	H	CH ₂	sec-C ₄ H ₉
S-30	O	CH ₃	H	CH ₂	tert-C ₄ H ₉
S-31	O	CH ₃	H	CH ₂	n-C ₅ H ₁₁
S-32	O	CH ₃	H	CH ₂	n-C ₆ H ₁₃

Compound	U	R'	R ^B	W	R ⁴
S-33	O	CH3	H	CH2	cyclo-C3H5
S-34	O	CH3	H	CH2	cyclo-C5H9
S-35	O	CH3	H	CH2	cyclo-C6H11
S-36	O	CH3	H	CH2	CH2=CHCH2
S-37	O	CH3	H	CH2	CHCCH2
S-38	O	CH3	H	CH2	PhCH2
S-39	O	CH3	H	CH2	Ph(CH3)CH
S-40	O	CH3	H	CH2	Ph(CH3)2C
S-41	O	CH3	H	CH2	Ph
S-42	O	CH3	H	CH2	2-Cl-Ph
S-43	O	CH3	H	CH2	3-Cl-Ph
S-44	O	CH3	H	CH2	4-Cl-Ph
S-45	O	CH3	H	CH2	4-CF3O-Ph
S-46	O	CH3	H	CH2	4-(4-CF3-PhO)-Ph
S-47	O	CH3	CH3	CH2	CH3
S-48	O	CH3	CH3	CH2	C2H5
S-49	O	CH3	CH3	CH2	n-C3H7
S-50	O	CH3	CH3	CH2	iso-C3H7
S-51	O	CH3	CH3	CH2	n-C4H9
S-52	O	CH3	CH3	CH2	iso-C4H9
S-53	O	CH3	CH3	CH2	sec-C4H9
S-54	O	CH3	CH3	CH2	tert-C4H9
S-55	O	CH3	CH3	CH2	n-C5H11
S-56	O	CH3	CH3	CH2	n-C6H13
S-57	O	CH3	CH3	CH2	cyclo-C3H5
S-58	O	CH3	CH3	CH2	cyclo-C5H9
S-59	O	CH3	CH3	CH2	cyclo-C6H11
S-60	O	CH3	CH3	CH2	CH2=CHCH2
S-61	O	CH3	CH3	CH2	CHCCH2
S-62	O	CH3	CH3	CH2	PhCH2
S-63	O	CH3	CH3	CH2	Ph(CH3)CH
S-64	O	CH3	CH3	CH2	Ph(CH3)2C
S-65	O	CH3	CH3	CH2	Ph
S-66	O	CH3	CH3	CH2	2-Cl-Ph
S-67	O	CH3	CH3	CH2	3-Cl-Ph
S-68	O	CH3	CH3	CH2	4-Cl-Ph
S-69	O	CH3	CH3	CH2	4-CF3O-Ph
S-70	O	CH3	CH3	CH2	4-(4-CF3-PhO)-Ph
S-71	O	OCH3	H	CH2	C2H5
S-72	O	OCH3	H	CH2	n-C3H7
S-73	O	OCH3	H	CH2	iso-C3H7
S-74	O	OCH3	H	CH2	n-C4H9

Compound	U	R ⁷	R ⁸	W	R ⁴
S-75	O	OCH3	H	CH2	iso-C4H9
S-76	O	OCH3	H	CH2	sec-C4H9
S-77	O	OCH3	H	CH2	tert-C4H9
S-78	O	OCH3	H	CH2	n-C5H11
S-79	O	OCH3	H	CH2	n-C6H13
S-80	O	OCH3	H	CH2	cyclo-C3H5
S-81	O	OCH3	H	CH2	cyclo-C5H9
S-82	O	OCH3	H	CH2	cyclo-C6H11
S-83	O	OCH3	H	CH2	CH2=CHCH2
S-84	O	OCH3	H	CH2	CHCCH2
S-85	O	OCH3	H	CH2	PhCH2
S-86	O	OCH3	H	CH2	Ph(CH3)CH
S-87	O	OCH3	H	CH2	Ph(CH3)2C
S-88	O	OCH3	H	CH2	Ph
S-89	O	OCH3	H	CH2	2-Cl-Ph
S-90	O	OCH3	H	CH2	3-Cl-Ph
S-91	O	OCH3	H	CH2	4-Cl-Ph
S-92	O	OCH3	H	CH2	4-CF3O-Ph
S-93	O	OCH3	H	CH2	4-(4-CF3-PhO)-Ph
S-94	O	OCH2CH3	H	CH2	CH3
S-95	O	OCH2CH3	H	CH2	C2H5
S-96	O	OCH2CH3	H	CH2	n-C3H7
S-97	O	OCH2CH3	H	CH2	iso-C3H7
S-98	O	OCH2CH3	H	CH2	n-C4H9
S-99	O	OCH2CH3	H	CH2	iso-C4H9
S-100	O	OCH2CH3	H	CH2	sec-C4H9
S-101	O	OCH2CH3	H	CH2	tert-C4H9
S-102	O	OCH2CH3	H	CH2	n-C5H11
S-103	O	OCH2CH3	H	CH2	n-C6H13
S-104	O	OCH2CH3	H	CH2	cyclo-C3H5
S-105	O	OCH2CH3	H	CH2	cyclo-C5H9
S-106	O	OCH2CH3	H	CH2	cyclo-C6H11
S-107	O	OCH2CH3	H	CH2	CH2=CHCH2
S-108	O	OCH2CH3	H	CH2	CHCCH2
S-109	O	OCH2CH3	H	CH2	PhCH2
S-110	O	OCH2CH3	H	CH2	Ph(CH3)CH
S-111	O	OCH2CH3	H	CH2	Ph(CH3)2C
S-112	O	OCH2CH3	H	CH2	Ph
S-113	O	OCH2CH3	H	CH2	2-Cl-Ph
S-114	O	OCH2CH3	H	CH2	3-Cl-Ph
S-115	O	OCH2CH3	H	CH2	4-Cl-Ph
S-116	O	OCH2CH3	H	CH2	4-CF3O-Ph

Compound	U	R ⁷	R ⁸	W	R ⁴
S-117	O	OCH ₂ CH ₃	H	CH ₂	4-(4-CF ₃ -PhO)-Ph
S-118	O	H	H	C=O	H
S-119	O	H	H	C=O	n-C ₃ H ₇
S-120	O	H	H	C=O	iso-C ₃ H ₇
S-121	O	H	H	C=O	n-C ₄ H ₉
S-122	O	H	H	C=O	iso-C ₄ H ₉
S-123	O	H	H	C=O	sec-C ₄ H ₉
S-124	O	H	H	C=O	tert-C ₄ H ₉
S-125	O	H	H	C=O	n-C ₅ H ₁₁
S-126	O	H	H	C=O	n-C ₆ H ₁₃
S-127	O	H	H	C=O	cyclo-C ₃ H ₅
S-128	O	H	H	C=O	cyclo-C ₅ H ₉
S-129	O	H	H	C=O	cyclo-C ₆ H ₁₁
S-130	O	H	H	C=O	CH ₂ =CHCH ₂
S-131	O	H	H	C=O	CHCCH ₂
S-132	O	H	H	C=O	PhCH ₂
S-133	O	H	H	C=O	Ph(CH ₃)CH
S-134	O	H	H	C=O	Ph(CH ₃) ₂ C
S-135	O	H	H	C=O	Ph
S-136	O	H	H	C=O	2-Cl-Ph
S-137	O	H	H	C=O	3-Cl-Ph
S-138	O	H	H	C=O	4-Cl-Ph
S-139	O	H	H	C=O	4-CF ₃ O-Ph
S-140	O	H	H	C=O	4-(4-CF ₃ -PhO)-Ph
S-141	O	CH ₃	H	C=O	C ₂ H ₅
S-142	O	CH ₃	H	C=O	n-C ₃ H ₇
S-143	O	CH ₃	H	C=O	iso-C ₃ H ₇
S-144	O	CH ₃	H	C=O	n-C ₄ H ₉
S-145	O	CH ₃	H	C=O	iso-C ₄ H ₉
S-146	O	CH ₃	H	C=O	sec-C ₄ H ₉
S-147	O	CH ₃	H	C=O	tert-C ₄ H ₉
S-148	O	CH ₃	H	C=O	n-C ₅ H ₁₁
S-149	O	CH ₃	H	C=O	n-C ₆ H ₁₃
S-150	O	CH ₃	H	C=O	cyclo-C ₃ H ₅
S-151	O	CH ₃	H	C=O	cyclo-C ₅ H ₉
S-152	O	CH ₃	H	C=O	cyclo-C ₆ H ₁₁
S-153	O	CH ₃	H	C=O	CH ₂ =CHCH ₂
S-154	O	CH ₃	H	C=O	CHCCH ₂
S-155	O	CH ₃	H	C=O	PhCH ₂
S-156	O	CH ₃	H	C=O	Ph(CH ₃)CH
S-157	O	CH ₃	H	C=O	Ph(CH ₃) ₂ C
S-158	O	CH ₃	H	C=O	Ph

Compound	U	R ¹	R ²	W	R ⁴
S-159	O	CH ₃	H	C=O	2-Cl-Ph
S-160	O	CH ₃	H	C=O	3-Cl-Ph
S-161	O	CH ₃	H	C=O	4-Cl-Ph
S-162	O	CH ₃	H	C=O	4-CF ₃ O-Ph
S-163	O	CH ₃	H	C=O	4-(4-CF ₃ -PhO)-Ph
S-164	O	CH ₃	CH ₃	C=O	CH ₃
S-165	O	CH ₃	CH ₃	C=O	C ₂ H ₅
S-166	O	CH ₃	CH ₃	C=O	n-C ₃ H ₇
S-167	O	CH ₃	CH ₃	C=O	iso-C ₃ H ₇
S-168	O	CH ₃	CH ₃	C=O	n-C ₄ H ₉
S-169	O	CH ₃	CH ₃	C=O	iso-C ₄ H ₉
S-170	O	CH ₃	CH ₃	C=O	sec-C ₄ H ₉
S-171	O	CH ₃	CH ₃	C=O	tert-C ₄ H ₉
S-172	O	CH ₃	CH ₃	C=O	n-C ₅ H ₁₁
S-173	O	CH ₃	CH ₃	C=O	n-C ₆ H ₁₃
S-174	O	CH ₃	CH ₃	C=O	cyclo-C ₃ H ₅
S-175	O	CH ₃	CH ₃	C=O	cyclo-C ₅ H ₉
S-176	O	CH ₃	CH ₃	C=O	cyclo-C ₆ H ₁₁
S-177	O	CH ₃	CH ₃	C=O	CH ₂ =CHCH ₂
S-178	O	CH ₃	CH ₃	C=O	CHCCH ₂
S-179	O	CH ₃	CH ₃	C=O	PhCH ₂
S-180	O	CH ₃	CH ₃	C=O	Ph(CH ₃)CH
S-181	O	CH ₃	CH ₃	C=O	Ph(CH ₃) ₂ C
S-182	O	CH ₃	CH ₃	C=O	Ph
S-183	O	CH ₃	CH ₃	C=O	2-Cl-Ph
S-184	O	CH ₃	CH ₃	C=O	3-Cl-Ph
S-185	O	CH ₃	CH ₃	C=O	4-Cl-Ph
S-186	O	CH ₃	CH ₃	C=O	4-CF ₃ O-Ph
S-187	O	CH ₃	CH ₃	C=O	4-(4-CF ₃ -PhO)-Ph
S-188	O	OCH ₃	H	C=O	C ₂ H ₅
S-189	O	OCH ₃	H	C=O	n-C ₃ H ₇
S-190	O	OCH ₃	H	C=O	iso-C ₃ H ₇
S-191	O	OCH ₃	H	C=O	n-C ₄ H ₉
S-192	O	OCH ₃	H	C=O	iso-C ₄ H ₉
S-193	O	OCH ₃	H	C=O	sec-C ₄ H ₉
S-194	O	OCH ₃	H	C=O	tert-C ₄ H ₉
S-195	O	OCH ₃	H	C=O	n-C ₅ H ₁₁
S-196	O	OCH ₃	H	C=O	n-C ₆ H ₁₃
S-197	O	OCH ₃	H	C=O	cyclo-C ₃ H ₅
S-198	O	OCH ₃	H	C=O	cyclo-C ₅ H ₉
S-199	O	OCH ₃	H	C=O	cyclo-C ₆ H ₁₁
S-200	O	OCH ₃	H	C=O	CH ₂ =CHCH ₂

Compound	U	R ⁷	R ⁸	W	R ⁴
S-201	O	OCH ₃	H	C=O	CHCCH ₂
S-202	O	OCH ₃	H	C=O	PhCH ₂
S-203	O	OCH ₃	H	C=O	Ph(CH ₃)CH
S-204	O	OCH ₃	H	C=O	Ph(CH ₃) ₂ C
S-205	O	OCH ₃	H	C=O	Ph
S-206	O	OCH ₃	H	C=O	2-Cl-Ph
S-207	O	OCH ₃	H	C=O	3-Cl-Ph
S-208	O	OCH ₃	H	C=O	4-Cl-Ph
S-209	O	OCH ₃	H	C=O	4-CF ₃ O-Ph
S-210	O	OCH ₃	H	C=O	4-(4-CF ₃ -PhO)-Ph
S-211	O	OCH ₂ CH ₃	H	C=O	CH ₃
S-212	O	OCH ₂ CH ₃	H	C=O	C ₂ H ₅
S-213	O	OCH ₂ CH ₃	H	C=O	n-C ₃ H ₇
S-214	O	OCH ₂ CH ₃	H	C=O	iso-C ₃ H ₇
S-215	O	OCH ₂ CH ₃	H	C=O	n-C ₄ H ₉
S-216	O	OCH ₂ CH ₃	H	C=O	iso-C ₄ H ₉
S-217	O	OCH ₂ CH ₃	H	C=O	sec-C ₄ H ₉
S-218	O	OCH ₂ CH ₃	H	C=O	tert-C ₄ H ₉
S-219	O	OCH ₂ CH ₃	H	C=O	n-C ₅ H ₁₁
S-220	O	OCH ₂ CH ₃	H	C=O	n-C ₆ H ₁₃
S-221	O	OCH ₂ CH ₃	H	C=O	cyclo-C ₃ H ₅
S-222	O	OCH ₂ CH ₃	H	C=O	cyclo-C ₅ H ₉
S-223	O	OCH ₂ CH ₃	H	C=O	cyclo-C ₆ H ₁₁
S-224	O	OCH ₂ CH ₃	H	C=O	CH ₂ =CHCH ₂
S-225	O	OCH ₂ CH ₃	H	C=O	CHCCH ₂
S-226	O	OCH ₂ CH ₃	H	C=O	PhCH ₂
S-227	O	OCH ₂ CH ₃	H	C=O	Ph(CH ₃)CH
S-228	O	OCH ₂ CH ₃	H	C=O	Ph(CH ₃) ₂ C
S-229	O	OCH ₂ CH ₃	H	C=O	Ph
S-230	O	OCH ₂ CH ₃	H	C=O	2-Cl-Ph
S-231	O	OCH ₂ CH ₃	H	C=O	3-Cl-Ph
S-232	O	OCH ₂ CH ₃	H	C=O	4-Cl-Ph
S-233	O	OCH ₂ CH ₃	H	C=O	4-CF ₃ O-Ph
S-234	O	OCH ₂ CH ₃	H	C=O	4-(4-CF ₃ -PhO)-Ph
S-235	O	H	H	CH ₂ CH ₂	C ₂ H ₅
S-236	O	H	H	CH ₂ CH ₂	n-C ₃ H ₇
S-237	O	H	H	CH ₂ CH ₂	iso-C ₃ H ₇
S-238	O	H	H	CH ₂ CH ₂	n-C ₄ H ₉
S-239	O	H	H	CH ₂ CH ₂	iso-C ₄ H ₉
S-240	O	H	H	CH ₂ CH ₂	sec-C ₄ H ₉
S-241	O	H	H	CH ₂ CH ₂	tert-C ₄ H ₉
S-242	O	H	H	CH ₂ CH ₂	n-C ₅ H ₁₁

Compound	U	R ⁷	R ⁸	W	R ⁴
S-243	O	H	H	CH ₂ CH ₂	n-C ₆ H ₁₃
S-244	O	H	H	CH ₂ CH ₂	cyclo-C ₃ H ₅
S-245	O	H	H	CH ₂ CH ₂	cyclo-C ₅ H ₉
S-246	O	H	H	CH ₂ CH ₂	cyclo-C ₆ H ₁₁
S-247	O	H	H	CH ₂ CH ₂	CH ₂ =CHCH ₂
S-248	O	H	H	CH ₂ CH ₂	CHCCH ₂
S-249	O	H	H	CH ₂ CH ₂	PhCH ₂
S-250	O	H	H	CH ₂ CH ₂	Ph(CH ₃)CH
S-251	O	H	H	CH ₂ CH ₂	Ph(CH ₃) ₂ C
S-252	O	H	H	CH ₂ CH ₂	Ph
S-253	O	H	H	CH ₂ CH ₂	2-Cl-Ph
S-254	O	H	H	CH ₂ CH ₂	3-Cl-Ph
S-255	O	H	H	CH ₂ CH ₂	4-Cl-Ph
S-256	O	H	H	CH ₂ CH ₂	4-CF ₃ O-Ph
S-257	O	H	H	CH ₂ CH ₂	4-(4-CF ₃ -PhO)-Ph
S-258	O	CH ₃	H	CH ₂ CH ₂	CH ₃
S-259	O	CH ₃	H	CH ₂ CH ₂	C ₂ H ₅
S-260	O	CH ₃	H	CH ₂ CH ₂	n-C ₃ H ₇
S-261	O	CH ₃	H	CH ₂ CH ₂	iso-C ₃ H ₇
S-262	O	CH ₃	H	CH ₂ CH ₂	n-C ₄ H ₉
S-263	O	CH ₃	H	CH ₂ CH ₂	iso-C ₄ H ₉
S-264	O	CH ₃	H	CH ₂ CH ₂	sec-C ₄ H ₉
S-265	O	CH ₃	H	CH ₂ CH ₂	tert-C ₄ H ₉
S-266	O	CH ₃	H	CH ₂ CH ₂	n-C ₅ H ₁₁
S-267	O	CH ₃	H	CH ₂ CH ₂	n-C ₆ H ₁₃
S-268	O	CH ₃	H	CH ₂ CH ₂	cyclo-C ₃ H ₅
S-269	O	CH ₃	H	CH ₂ CH ₂	cyclo-C ₅ H ₉
S-270	O	CH ₃	H	CH ₂ CH ₂	cyclo-C ₆ H ₁₁
S-271	O	CH ₃	H	CH ₂ CH ₂	CH ₂ =CHCH ₂
S-272	O	CH ₃	H	CH ₂ CH ₂	CHCCH ₂
S-273	O	CH ₃	H	CH ₂ CH ₂	PhCH ₂
S-274	O	CH ₃	H	CH ₂ CH ₂	Ph(CH ₃)CH
S-275	O	CH ₃	H	CH ₂ CH ₂	Ph(CH ₃) ₂ C
S-276	O	CH ₃	H	CH ₂ CH ₂	Ph
S-277	O	CH ₃	H	CH ₂ CH ₂	2-Cl-Ph
S-278	O	CH ₃	H	CH ₂ CH ₂	3-Cl-Ph
S-279	O	CH ₃	H	CH ₂ CH ₂	4-Cl-Ph
S-280	O	CH ₃	H	CH ₂ CH ₂	4-CF ₃ O-Ph
S-281	O	CH ₃	H	CH ₂ CH ₂	4-(4-CF ₃ -PhO)-Ph
S-282	O	CH ₃	CH ₃	CH ₂ CH ₂	H
S-283	O	CH ₃	CH ₃	CH ₂ CH ₂	CH ₃
S-284	O	CH ₃	CH ₃	CH ₂ CH ₂	C ₂ H ₅

Compound	U	R ⁷	R ⁸	W	R ⁴
S-285	O	CH ₃	CH ₃	CH ₂ CH ₂	n-C ₃ H ₇
S-286	O	CH ₃	CH ₃	CH ₂ CH ₂	iso-C ₃ H ₇
S-287	O	CH ₃	CH ₃	CH ₂ CH ₂	n-C ₄ H ₉
S-288	O	CH ₃	CH ₃	CH ₂ CH ₂	iso-C ₄ H ₉
S-289	O	CH ₃	CH ₃	CH ₂ CH ₂	sec-C ₄ H ₉
S-290	O	CH ₃	CH ₃	CH ₂ CH ₂	tert-C ₄ H ₉
S-291	O	CH ₃	CH ₃	CH ₂ CH ₂	n-C ₅ H ₁₁
S-292	O	CH ₃	CH ₃	CH ₂ CH ₂	n-C ₆ H ₁₃
S-293	O	CH ₃	CH ₃	CH ₂ CH ₂	cyclo-C ₃ H ₅
S-294	O	CH ₃	CH ₃	CH ₂ CH ₂	cyclo-C ₅ H ₉
S-295	O	CH ₃	CH ₃	CH ₂ CH ₂	cyclo-C ₆ H ₁₁
S-296	O	CH ₃	CH ₃	CH ₂ CH ₂	CH ₂ =CHCH ₂
S-297	O	CH ₃	CH ₃	CH ₂ CH ₂	CHCCH ₂
S-298	O	CH ₃	CH ₃	CH ₂ CH ₂	PhCH ₂
S-299	O	CH ₃	CH ₃	CH ₂ CH ₂	Ph(CH ₃)CH
S-300	O	CH ₃	CH ₃	CH ₂ CH ₂	Ph(CH ₃) ₂ C
S-301	O	CH ₃	CH ₃	CH ₂ CH ₂	Ph
S-302	O	CH ₃	CH ₃	CH ₂ CH ₂	2-Cl-Ph
S-303	O	CH ₃	CH ₃	CH ₂ CH ₂	3-Cl-Ph
S-304	O	CH ₃	CH ₃	CH ₂ CH ₂	4-Cl-Ph
S-305	O	CH ₃	CH ₃	CH ₂ CH ₂	4-CF ₃ O-Ph
S-306	O	CH ₃	CH ₃	CH ₂ CH ₂	4-(4-CF ₃ -PhO)-Ph
S-307	O	OCH ₃	H	CH ₂ CH ₂	CH ₃
S-308	O	OCH ₃	H	CH ₂ CH ₂	C ₂ H ₅
S-309	O	OCH ₃	H	CH ₂ CH ₂	n-C ₃ H ₇
S-310	O	OCH ₃	H	CH ₂ CH ₂	iso-C ₃ H ₇
S-311	O	OCH ₃	H	CH ₂ CH ₂	n-C ₄ H ₉
S-312	O	OCH ₃	H	CH ₂ CH ₂	iso-C ₄ H ₉
S-313	O	OCH ₃	H	CH ₂ CH ₂	sec-C ₄ H ₉
S-314	O	OCH ₃	H	CH ₂ CH ₂	tert-C ₄ H ₉
S-315	O	OCH ₃	H	CH ₂ CH ₂	n-C ₅ H ₁₁
S-316	O	OCH ₃	H	CH ₂ CH ₂	n-C ₆ H ₁₃
S-317	O	OCH ₃	H	CH ₂ CH ₂	cyclo-C ₃ H ₅
S-318	O	OCH ₃	H	CH ₂ CH ₂	cyclo-C ₅ H ₉
S-319	O	OCH ₃	H	CH ₂ CH ₂	cyclo-C ₆ H ₁₁
S-320	O	OCH ₃	H	CH ₂ CH ₂	CH ₂ =CHCH ₂
S-321	O	OCH ₃	H	CH ₂ CH ₂	CHCCH ₂
S-322	O	OCH ₃	H	CH ₂ CH ₂	PhCH ₂
S-323	O	OCH ₃	H	CH ₂ CH ₂	Ph(CH ₃)CH
S-324	O	OCH ₃	H	CH ₂ CH ₂	Ph(CH ₃) ₂ C
S-325	O	OCH ₃	H	CH ₂ CH ₂	Ph
S-326	O	OCH ₃	H	CH ₂ CH ₂	2-Cl-Ph

Compound	U	R ¹	R ²	W	R ³
S-327	O	OCH ₃	H	CH ₂ CH ₂	3-Cl-Ph
S-328	O	OCH ₃	H	CH ₂ CH ₂	4-Cl-Ph
S-329	O	OCH ₃	H	CH ₂ CH ₂	4-CF ₃ O-Ph
S-330	O	OCH ₃	H	CH ₂ CH ₂	4-(4-CF ₃ -PhO)-Ph
S-331	O	OCH ₂ CH ₃	H	CH ₂ CH ₂	H
S-332	O	OCH ₂ CH ₃	H	CH ₂ CH ₂	CH ₃
S-333	O	OCH ₂ CH ₃	H	CH ₂ CH ₂	C ₂ H ₅
S-334	O	OCH ₂ CH ₃	H	CH ₂ CH ₂	n-C ₃ H ₇
S-335	O	OCH ₂ CH ₃	H	CH ₂ CH ₂	iso-C ₃ H ₇
S-336	O	OCH ₂ CH ₃	H	CH ₂ CH ₂	n-C ₄ H ₉
S-337	O	OCH ₂ CH ₃	H	CH ₂ CH ₂	iso-C ₄ H ₉
S-338	O	OCH ₂ CH ₃	H	CH ₂ CH ₂	sec-C ₄ H ₉
S-339	O	OCH ₂ CH ₃	H	CH ₂ CH ₂	tert-C ₄ H ₉
S-340	O	OCH ₂ CH ₃	H	CH ₂ CH ₂	n-C ₅ H ₁₁
S-341	O	OCH ₂ CH ₃	H	CH ₂ CH ₂	n-C ₆ H ₁₃
S-342	O	OCH ₂ CH ₃	H	CH ₂ CH ₂	cyclo-C ₃ H ₅
S-343	O	OCH ₂ CH ₃	H	CH ₂ CH ₂	cyclo-C ₅ H ₉
S-344	O	OCH ₂ CH ₃	H	CH ₂ CH ₂	cyclo-C ₆ H ₁₁
S-345	O	OCH ₂ CH ₃	H	CH ₂ CH ₂	CH ₂ =CHCH ₂
S-346	O	OCH ₂ CH ₃	H	CH ₂ CH ₂	CHCCH ₂
S-347	O	OCH ₂ CH ₃	H	CH ₂ CH ₂	PhCH ₂
S-348	O	OCH ₂ CH ₃	H	CH ₂ CH ₂	Ph(CH ₃)CH
S-349	O	OCH ₂ CH ₃	H	CH ₂ CH ₂	Ph(CH ₃) ₂ C
S-350	O	OCH ₂ CH ₃	H	CH ₂ CH ₂	Ph
S-351	O	OCH ₂ CH ₃	H	CH ₂ CH ₂	2-Cl-Ph
S-352	O	OCH ₂ CH ₃	H	CH ₂ CH ₂	3-Cl-Ph
S-353	O	OCH ₂ CH ₃	H	CH ₂ CH ₂	4-Cl-Ph
S-354	O	OCH ₂ CH ₃	H	CH ₂ CH ₂	4-CF ₃ O-Ph
S-355	O	OCH ₂ CH ₃	H	CH ₂ CH ₂	4-(4-CF ₃ -PhO)-Ph
S-356	S	H	H	CH ₂	H
S-357	S	H	H	CH ₂	n-C ₃ H ₇
S-358	S	H	H	CH ₂	iso-C ₃ H ₇
S-359	S	H	H	CH ₂	n-C ₄ H ₉
S-360	S	H	H	CH ₂	iso-C ₄ H ₉
S-361	S	H	H	CH ₂	sec-C ₄ H ₉
S-362	S	H	H	CH ₂	tert-C ₄ H ₉
S-363	S	H	H	CH ₂	n-C ₅ H ₁₁
S-364	S	H	H	CH ₂	n-C ₆ H ₁₃
S-365	S	H	H	CH ₂	cyclo-C ₃ H ₅
S-366	S	H	H	CH ₂	cyclo-C ₅ H ₉
S-367	S	H	H	CH ₂	cyclo-C ₆ H ₁₁
S-368	S	H	H	CH ₂	CH ₂ =CHCH ₂

Compound	U	R ⁷	R ⁸	W	R ⁴
S-369	S	H	H	CH ₂	CHCCH ₂
S-370	S	H	H	CH ₂	PhCH ₂
S-371	S	H	H	CH ₂	Ph(CH ₃)CH
S-372	S	H	H	CH ₂	Ph(CH ₃) ₂ C
S-373	S	H	H	CH ₂	Ph
S-374	S	H	H	CH ₂	2-Cl-Ph
S-375	S	H	H	CH ₂	3-Cl-Ph
S-376	S	H	H	CH ₂	4-Cl-Ph
S-377	S	H	H	CH ₂	4-CF ₃ O-Ph
S-378	S	H	H	CH ₂	4-(4-CF ₃ -PhO)-Ph
S-379	S	CH ₃	H	CH ₂	C ₂ H ₅
S-380	S	CH ₃	H	CH ₂	n-C ₃ H ₇
S-381	S	CH ₃	H	CH ₂	iso-C ₃ H ₇
S-382	S	CH ₃	H	CH ₂	n-C ₄ H ₉
S-383	S	CH ₃	H	CH ₂	iso-C ₄ H ₉
S-384	S	CH ₃	H	CH ₂	sec-C ₄ H ₉
S-385	S	CH ₃	H	CH ₂	tert-C ₄ H ₉
S-386	S	CH ₃	H	CH ₂	n-C ₅ H ₁₁
S-387	S	CH ₃	H	CH ₂	n-C ₆ H ₁₃
S-388	S	CH ₃	H	CH ₂	cyclo-C ₃ H ₅
S-389	S	CH ₃	H	CH ₂	cyclo-C ₅ H ₉
S-390	S	CH ₃	H	CH ₂	cyclo-C ₆ H ₁₁
S-391	S	CH ₃	H	CH ₂	CH ₂ =CHCH ₂
S-392	S	CH ₃	H	CH ₂	CHCCH ₂
S-393	S	CH ₃	H	CH ₂	PhCH ₂
S-394	S	CH ₃	H	CH ₂	Ph(CH ₃)CH
S-395	S	CH ₃	H	CH ₂	Ph(CH ₃) ₂ C
S-396	S	CH ₃	H	CH ₂	Ph
S-397	S	CH ₃	H	CH ₂	2-Cl-Ph
S-398	S	CH ₃	H	CH ₂	3-Cl-Ph
S-399	S	CH ₃	H	CH ₂	4-Cl-Ph
S-400	S	CH ₃	H	CH ₂	4-CF ₃ O-Ph
S-401	S	CH ₃	H	CH ₂	4-(4-CF ₃ -PhO)-Ph
S-402	S	CH ₃	CH ₃	CH ₂	CH ₃
S-403	S	CH ₃	CH ₃	CH ₂	C ₂ H ₅
S-404	S	CH ₃	CH ₃	CH ₂	n-C ₃ H ₇
S-405	S	CH ₃	CH ₃	CH ₂	iso-C ₃ H ₇
S-406	S	CH ₃	CH ₃	CH ₂	n-C ₄ H ₉
S-407	S	CH ₃	CH ₃	CH ₂	iso-C ₄ H ₉
S-408	S	CH ₃	CH ₃	CH ₂	sec-C ₄ H ₉
S-409	S	CH ₃	CH ₃	CH ₂	tert-C ₄ H ₉
S-410	S	CH ₃	CH ₃	CH ₂	n-C ₅ H ₁₁

Compound	U	R ⁷	R ⁸	W	R ⁴
S-411	S	CH ₃	CH ₃	CH ₂	n-C ₆ H ₁₃
S-412	S	CH ₃	CH ₃	CH ₂	cyclo-C ₃ H ₅
S-413	S	CH ₃	CH ₃	CH ₂	cyclo-C ₅ H ₉
S-414	S	CH ₃	CH ₃	CH ₂	cyclo-C ₆ H ₁₁
S-415	S	CH ₃	CH ₃	CH ₂	CH ₂ =CHCH ₂
S-416	S	CH ₃	CH ₃	CH ₂	CHCCH ₂
S-417	S	CH ₃	CH ₃	CH ₂	PhCH ₂
S-418	S	CH ₃	CH ₃	CH ₂	Ph(CH ₃)CH
S-419	S	CH ₃	CH ₃	CH ₂	Ph(CH ₃) ₂ C
S-420	S	CH ₃	CH ₃	CH ₂	Ph
S-421	S	CH ₃	CH ₃	CH ₂	2-Cl-Ph
S-422	S	CH ₃	CH ₃	CH ₂	3-Cl-Ph
S-423	S	CH ₃	CH ₃	CH ₂	4-Cl-Ph
S-424	S	CH ₃	CH ₃	CH ₂	4-CF ₃ O-Ph
S-425	S	CH ₃	CH ₃	CH ₂	4-(4-CF ₃ -PhO)-Ph
S-426	S	OCH ₃	H	CH ₂	C ₂ H ₅
S-427	S	OCH ₃	H	CH ₂	n-C ₃ H ₇
S-428	S	OCH ₃	H	CH ₂	iso-C ₃ H ₇
S-429	S	OCH ₃	H	CH ₂	n-C ₄ H ₉
S-430	S	OCH ₃	H	CH ₂	iso-C ₄ H ₉
S-431	S	OCH ₃	H	CH ₂	sec-C ₄ H ₉
S-432	S	OCH ₃	H	CH ₂	tert-C ₄ H ₉
S-433	S	OCH ₃	H	CH ₂	n-C ₅ H ₁₁
S-434	S	OCH ₃	H	CH ₂	n-C ₆ H ₁₃
S-435	S	OCH ₃	H	CH ₂	cyclo-C ₃ H ₅
S-436	S	OCH ₃	H	CH ₂	cyclo-C ₅ H ₉
S-437	S	OCH ₃	H	CH ₂	cyclo-C ₆ H ₁₁
S-438	S	OCH ₃	H	CH ₂	CH ₂ =CHCH ₂
S-439	S	OCH ₃	H	CH ₂	CHCCH ₂
S-440	S	OCH ₃	H	CH ₂	PhCH ₂
S-441	S	OCH ₃	H	CH ₂	Ph(CH ₃)CH
S-442	S	OCH ₃	H	CH ₂	Ph(CH ₃) ₂ C
S-443	S	OCH ₃	H	CH ₂	Ph
S-444	S	OCH ₃	H	CH ₂	2-Cl-Ph
S-445	S	OCH ₃	H	CH ₂	3-Cl-Ph
S-446	S	OCH ₃	H	CH ₂	4-Cl-Ph
S-447	S	OCH ₃	H	CH ₂	4-CF ₃ O-Ph
S-448	S	OCH ₃	H	CH ₂	4-(4-CF ₃ -PhO)-Ph
S-449	S	H	H	CH ₂ CH ₂	C ₂ H ₅
S-450	S	H	H	CH ₂ CH ₂	n-C ₃ H ₇
S-451	S	H	H	CH ₂ CH ₂	iso-C ₃ H ₇
S-452	S	H	H	CH ₂ CH ₂	n-C ₄ H ₉

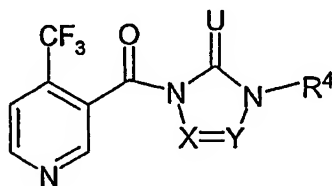
Compound	U	R ⁷	R ⁸	W	R ⁴
S-453	S	H	H	CH ₂ CH ₂	iso-C ₄ H ₉
S-454	S	H	H	CH ₂ CH ₂	sec-C ₄ H ₉
S-455	S	H	H	CH ₂ CH ₂	tert-C ₄ H ₉
S-456	S	H	H	CH ₂ CH ₂	n-C ₅ H ₁₁
S-457	S	H	H	CH ₂ CH ₂	n-C ₆ H ₁₃
S-458	S	H	H	CH ₂ CH ₂	cyclo-C ₃ H ₅
S-459	S	H	H	CH ₂ CH ₂	cyclo-C ₅ H ₉
S-460	S	H	H	CH ₂ CH ₂	cyclo-C ₆ H ₁₁
S-461	S	H	H	CH ₂ CH ₂	CH ₂ =CHCH ₂
S-462	S	H	H	CH ₂ CH ₂	CHCCH ₂
S-463	S	H	H	CH ₂ CH ₂	PhCH ₂
S-464	S	H	H	CH ₂ CH ₂	Ph(CH ₃)CH
S-465	S	H	H	CH ₂ CH ₂	Ph(CH ₃) ₂ C
S-466	S	H	H	CH ₂ CH ₂	Ph
S-467	S	H	H	CH ₂ CH ₂	2-Cl-Ph
S-468	S	H	H	CH ₂ CH ₂	3-Cl-Ph
S-469	S	H	H	CH ₂ CH ₂	4-Cl-Ph
S-470	S	H	H	CH ₂ CH ₂	4-CF ₃ O-Ph
S-471	S	H	H	CH ₂ CH ₂	4-(4-CF ₃ -PhO)-Ph
S-472	S	CH ₃	H	CH ₂ CH ₂	CH ₃
S-473	S	CH ₃	H	CH ₂ CH ₂	C ₂ H ₅
S-474	S	CH ₃	H	CH ₂ CH ₂	n-C ₃ H ₇
S-475	S	CH ₃	H	CH ₂ CH ₂	iso-C ₃ H ₇
S-476	S	CH ₃	H	CH ₂ CH ₂	n-C ₄ H ₉
S-477	S	CH ₃	H	CH ₂ CH ₂	iso-C ₄ H ₉
S-478	S	CH ₃	H	CH ₂ CH ₂	sec-C ₄ H ₉
S-479	S	CH ₃	H	CH ₂ CH ₂	tert-C ₄ H ₉
S-480	S	CH ₃	H	CH ₂ CH ₂	n-C ₅ H ₁₁
S-481	S	CH ₃	H	CH ₂ CH ₂	n-C ₆ H ₁₃
S-482	S	CH ₃	H	CH ₂ CH ₂	cyclo-C ₃ H ₅
S-483	S	CH ₃	H	CH ₂ CH ₂	cyclo-C ₅ H ₉
S-484	S	CH ₃	H	CH ₂ CH ₂	cyclo-C ₆ H ₁₁
S-485	S	CH ₃	H	CH ₂ CH ₂	CH ₂ =CHCH ₂
S-486	S	CH ₃	H	CH ₂ CH ₂	CHCCH ₂
S-487	S	CH ₃	H	CH ₂ CH ₂	PhCH ₂
S-488	S	CH ₃	H	CH ₂ CH ₂	Ph(CH ₃)CH
S-489	S	CH ₃	H	CH ₂ CH ₂	Ph(CH ₃) ₂ C
S-490	S	CH ₃	H	CH ₂ CH ₂	Ph
S-491	S	CH ₃	H	CH ₂ CH ₂	2-Cl-Ph
S-492	S	CH ₃	H	CH ₂ CH ₂	3-Cl-Ph
S-493	S	CH ₃	H	CH ₂ CH ₂	4-Cl-Ph
S-494	S	CH ₃	H	CH ₂ CH ₂	4-CF ₃ O-Ph

Compound	U	R ¹	R ²	W	R ⁴
S-495	S	CH ₃	H	CH ₂ CH ₂	4-(4-CF ₃ -PhO)-Ph
S-496	S	CH ₃	CH ₃	CH ₂ CH ₂	H
S-497	S	CH ₃	CH ₃	CH ₂ CH ₂	CH ₃
S-498	S	CH ₃	CH ₃	CH ₂ CH ₂	C ₂ H ₅
S-499	S	CH ₃	CH ₃	CH ₂ CH ₂	n-C ₃ H ₇
S-500	S	CH ₃	CH ₃	CH ₂ CH ₂	iso-C ₃ H ₇
S-501	S	CH ₃	CH ₃	CH ₂ CH ₂	n-C ₄ H ₉
S-502	S	CH ₃	CH ₃	CH ₂ CH ₂	iso-C ₄ H ₉
S-503	S	CH ₃	CH ₃	CH ₂ CH ₂	sec-C ₄ H ₉
S-504	S	CH ₃	CH ₃	CH ₂ CH ₂	n-C ₄ H ₉
S-505	S	CH ₃	CH ₃	CH ₂ CH ₂	iso-C ₄ H ₉
S-506	S	CH ₃	CH ₃	CH ₂ CH ₂	sec-C ₄ H ₉
S-507	S	CH ₃	CH ₃	CH ₂ CH ₂	tert-C ₄ H ₉
S-508	S	CH ₃	CH ₃	CH ₂ CH ₂	n-C ₅ H ₁₁
S-509	S	CH ₃	CH ₃	CH ₂ CH ₂	n-C ₆ H ₁₃
S-510	S	CH ₃	CH ₃	CH ₂ CH ₂	cyclo-C ₃ H ₅
S-511	S	CH ₃	CH ₃	CH ₂ CH ₂	cyclo-C ₅ H ₉
S-512	S	CH ₃	CH ₃	CH ₂ CH ₂	cyclo-C ₆ H ₁₁
S-513	S	CH ₃	CH ₃	CH ₂ CH ₂	CH ₂ =CHCH ₂
S-514	S	CH ₃	CH ₃	CH ₂ CH ₂	CHCCH ₂
S-515	S	CH ₃	CH ₃	CH ₂ CH ₂	PhCH ₂
S-516	S	CH ₃	CH ₃	CH ₂ CH ₂	Ph(CH ₃)CH
S-517	S	CH ₃	CH ₃	CH ₂ CH ₂	Ph(CH ₃) ₂ C
S-518	S	CH ₃	CH ₃	CH ₂ CH ₂	Ph
S-519	S	CH ₃	CH ₃	CH ₂ CH ₂	2-Cl-Ph
S-520	S	CH ₃	CH ₃	CH ₂ CH ₂	3-Cl-Ph
S-521	S	CH ₃	CH ₃	CH ₂ CH ₂	4-Cl-Ph
S-522	S	CH ₃	CH ₃	CH ₂ CH ₂	4-CF ₃ O-Ph
S-523	S	CH ₃	CH ₃	CH ₂ CH ₂	4-(4-CF ₃ -PhO)-Ph
S-524	S	OCH ₃	H	CH ₂ CH ₂	CH ₃
S-525	S	OCH ₃	H	CH ₂ CH ₂	C ₂ H ₅
S-526	S	OCH ₃	H	CH ₂ CH ₂	n-C ₃ H ₇
S-527	S	OCH ₃	H	CH ₂ CH ₂	iso-C ₃ H ₇
S-528	S	OCH ₃	H	CH ₂ CH ₂	n-C ₄ H ₉
S-529	S	OCH ₃	H	CH ₂ CH ₂	iso-C ₄ H ₉
S-530	S	OCH ₃	H	CH ₂ CH ₂	sec-C ₄ H ₉
S-531	S	OCH ₃	H	CH ₂ CH ₂	tert-C ₄ H ₉
S-532	S	OCH ₃	H	CH ₂ CH ₂	n-C ₅ H ₁₁
S-533	S	OCH ₃	H	CH ₂ CH ₂	n-C ₆ H ₁₃
S-534	S	OCH ₃	H	CH ₂ CH ₂	cyclo-C ₃ H ₅
S-535	S	OCH ₃	H	CH ₂ CH ₂	cyclo-C ₅ H ₉
S-536	S	OCH ₃	H	CH ₂ CH ₂	cyclo-C ₆ H ₁₁

Compound	U	R ⁷	R ⁸	W	R ⁴
S-537	S	OCH ₃	H	CH ₂ CH ₂	CH ₂ =CHCH ₂
S-538	S	OCH ₃	H	CH ₂ CH ₂	CHCCH ₂
S-539	S	OCH ₃	H	CH ₂ CH ₂	PhCH ₂
S-540	S	OCH ₃	H	CH ₂ CH ₂	Ph(CH ₃)CH
S-541	S	OCH ₃	H	CH ₂ CH ₂	Ph(CH ₃) ₂ C
S-542	S	OCH ₃	H	CH ₂ CH ₂	Ph
S-543	S	OCH ₃	H	CH ₂ CH ₂	2-Cl-Ph
S-544	S	OCH ₃	H	CH ₂ CH ₂	3-Cl-Ph
S-545	S	OCH ₃	H	CH ₂ CH ₂	4-Cl-Ph
S-546	S	OCH ₃	H	CH ₂ CH ₂	4-CF ₃ O-Ph
S-547	S	OCH ₃	H	CH ₂ CH ₂	4-(4-CF ₃ -PhO)-Ph
S-548	O	H	H	CH ₂	CH ₃ O
S-549	O	H	H	CH ₂	PhCH ₂ O
S-550	O	H	H	CH(CH ₃)	H
S-551	O	H	H	CH(C ₂ H ₅)	H
S-552	O	H	H	CH(C ₂ H ₅)	PhCH ₂
S-553	O	H	H	CHPh	H
S-554	O	H	H	CHPh	CH ₃
S-555	O	H	H	CHPh	PhCH ₂
S-556	O	CH ₃	H	CH ₂	H
S-557	O	Ph	H	CH ₂	H
S-558	O	Ph	H	CH ₂	CH ₃
S-559	O	Ph	H	CH ₂	PhCH ₂

Table 5

Compounds of formula (1B):



(1B)

5

Compound	U	X	Y	R ⁴
T-1	O	CH	CH	H
T-2	O	CH	CH	n-C ₃ H ₇
T-3	O	CH	CH	iso-C ₃ H ₇
T-4	O	CH	CH	n-C ₄ H ₉
T-5	O	CH	CH	iso-C ₄ H ₉
T-6	O	CH	CH	sec-C ₄ H ₉
T-7	O	CH	CH	tert-C ₄ H ₉

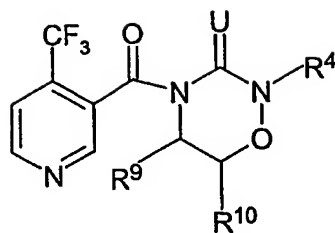
Compound	U	X	Y	R ⁴
T-8	O	CH	CH	n-C ₅ H ₁₁
T-9	O	CH	CH	n-C ₆ H ₁₃
T-10	O	CH	CH	cyclo-C ₃ H ₅
T-11	O	CH	CH	cyclo-C ₅ H ₉
T-12	O	CH	CH	cyclo-C ₆ H ₁₁
T-13	O	CH	CH	CH ₂ =CHCH ₂
T-14	O	CH	CH	CH ₂ CCH
T-15	O	CH	CH	PhCH ₂
T-16	O	CH	CH	Ph(CH ₃)CH
T-17	O	CH	CH	Ph
T-18	O	CH	CH	2-Cl-Ph
T-19	O	CH	CH	3-Cl-Ph
T-20	O	CH	CH	4-Cl-Ph
T-21	O	CH	CH	4-CF ₃ O-Ph
T-22	O	CH	CH	4-(4-CF ₃ -PhO)-Ph
T-23	O	CH	N	H
T-24	O	CH	N	CH ₃
T-25	O	CH	N	n-C ₄ H ₉
T-26	O	CH	N	iso-C ₄ H ₉
T-27	O	CH	N	sec-C ₄ H ₉
T-28	O	CH	N	tert-C ₄ H ₉
T-29	O	CH	N	n-C ₅ H ₁₁
T-30	O	CH	N	n-C ₆ H ₁₃
T-31	O	CH	N	cyclo-C ₃ H ₅
T-32	O	CH	N	cyclo-C ₅ H ₉
T-33	O	CH	N	cyclo-C ₆ H ₁₁
T-34	O	CH	N	CH ₂ =CHCH ₂
T-35	O	CH	N	CH ₂ CCH
T-36	O	CH	N	PhCH ₂
T-37	O	CH	N	Ph(CH ₃)CH
T-38	O	CH	N	Ph
T-39	O	CH	N	2-Cl-Ph
T-40	O	CH	N	3-Cl-Ph
T-41	O	CH	N	4-Cl-Ph
T-42	O	CH	N	4-CF ₃ O-Ph
T-43	O	CH	N	4-(4-CF ₃ -PhO)-Ph
T-44	O	N	N	H
T-45	O	N	N	CH ₃
T-46	O	N	N	C ₂ H ₅
T-47	O	N	N	n-C ₅ H ₁₁
T-48	O	N	N	n-C ₆ H ₁₃
T-49	O	N	N	cyclo-C ₃ H ₅

Compound	U	X	Y	R ⁴
T-50	O	N	N	cyclo-C ₅ H ₉
T-51	O	N	N	cyclo-C ₆ H ₁₁
T-52	O	N	N	CH ₂ =CHCH ₂
T-53	O	N	N	CH ₂ CCH
T-54	O	N	N	PhCH ₂
T-55	O	N	N	Ph(CH ₃)CH
T-56	O	N	N	Ph
T-57	O	N	N	2-Cl-Ph
T-58	O	N	N	3-Cl-Ph
T-59	O	N	N	4-Cl-Ph
T-60	O	N	N	4-CF ₃ O-Ph
T-61	O	N	N	4-(4-CF ₃ -PhO)-Ph
T-62	S	CH	CH	H
T-63	S	CH	CH	n-C ₃ H ₇
T-64	S	CH	CH	iso-C ₃ H ₇
T-65	S	CH	CH	n-C ₄ H ₉
T-66	S	CH	CH	iso-C ₄ H ₉
T-67	S	CH	CH	sec-C ₄ H ₉
T-68	S	CH	CH	tert-C ₄ H ₉
T-69	S	CH	CH	n-C ₅ H ₁₁
T-70	S	CH	CH	n-C ₆ H ₁₃
T-71	S	CH	CH	cyclo-C ₃ H ₅
T-72	S	CH	CH	cyclo-C ₅ H ₉
T-73	S	CH	CH	cyclo-C ₆ H ₁₁
T-74	S	CH	CH	CH ₂ =CHCH ₂
T-75	S	CH	CH	CH ₂ CCH
T-76	S	CH	CH	PhCH ₂
T-77	S	CH	CH	Ph(CH ₃)CH
T-78	S	CH	CH	Ph
T-79	S	CH	CH	2-Cl-Ph
T-80	S	CH	CH	3-Cl-Ph
T-81	S	CH	CH	4-Cl-Ph
T-82	S	CH	CH	4-CF ₃ O-Ph
T-83	S	CH	CH	4-(4-CF ₃ -PhO)-Ph
T-84	S	CH	N	H
T-85	S	CH	N	CH ₃
T-86	S	CH	N	n-C ₄ H ₉
T-87	S	CH	N	iso-C ₄ H ₉
T-88	S	CH	N	sec-C ₄ H ₉
T-89	S	CH	N	tert-C ₄ H ₉
T-90	S	CH	N	n-C ₅ H ₁₁
T-91	S	CH	N	n-C ₆ H ₁₃

Compound	U	X	Y	R ⁴
T-92	S	CH	N	cyclo-C ₃ H ₅
T-93	S	CH	N	cyclo-C ₅ H ₉
T-94	S	CH	N	cyclo-C ₆ H ₁₁
T-95	S	CH	N	CH ₂ =CHCH ₂
T-96	S	CH	N	CH ₂ CCH
T-97	S	CH	N	PhCH ₂
T-98	S	CH	N	Ph(CH ₃)CH
T-99	S	CH	N	Ph
T-100	S	CH	N	2-Cl-Ph
T-101	S	CH	N	3-Cl-Ph
T-102	S	CH	N	4-Cl-Ph
T-103	S	CH	N	4-CF ₃ O-Ph
T-104	S	CH	N	4-(4-CF ₃ -PhO)-Ph
T-105	S	N	N	H
T-106	S	N	N	CH ₃
T-107	S	N	N	C ₂ H ₅
T-108	S	N	N	n-C ₅ H ₁₁
T-109	S	N	N	n-C ₆ H ₁₃
T-110	S	N	N	cyclo-C ₃ H ₅
T-111	S	N	N	cyclo-C ₅ H ₉
T-112	S	N	N	cyclo-C ₆ H ₁₁
T-113	S	N	N	CH ₂ =CHCH ₂
T-114	S	N	N	CH ₂ CCH
T-115	S	N	N	PhCH ₂
T-116	S	N	N	Ph(CH ₃)CH
T-117	S	N	N	Ph
T-118	S	N	N	2-Cl-Ph
T-119	S	N	N	3-Cl-Ph
T-120	S	N	N	4-Cl-Ph
T-121	S	N	N	4-CF ₃ O-Ph
T-122	S	N	N	4-(4-CF ₃ -PhO)-Ph
T-123	S	N	N	Ph

Table 6

Compounds of formula (1C):



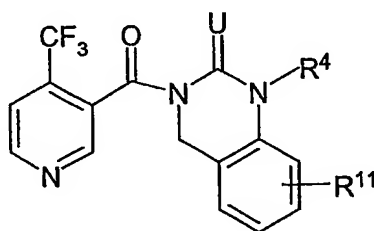
(1C)

Compound	U	R ⁴	R ⁹	R ¹⁰
U-1	O	H	H	H
U-2	O	n-C ₃ H ₇	H	H
U-3	O	iso-C ₃ H ₇	H	H
U-4	O	n-C ₄ H ₉	H	H
U-5	O	iso-C ₄ H ₉	H	H
U-6	O	sec-C ₄ H ₉	H	H
U-7	O	tert-C ₄ H ₉	H	H
U-8	O	n-C ₅ H ₁₁	H	H
U-9	O	n-C ₆ H ₁₃	H	H
U-10	O	cyclo-C ₃ H ₅	H	H
U-11	O	cyclo-C ₅ H ₉	H	H
U-12	O	cyclo-C ₆ H ₁₁	H	H
U-13	O	CH ₂ CH=CH ₂	H	H
U-14	O	CH ₂ C(CH ₃)=CH ₂	H	H
U-15	O	CH(CH ₃)CH=CH ₂	H	H
U-16	O	CH ₂ CH=CHCH ₃	H	H
U-17	O	CH ₂ CCH	H	H
U-18	O	CH ₂ CCCH ₃	H	H
U-19	O	CH(CH ₃)CCH	H	H
U-20	O	PhCH ₂	H	H
U-21	O	Ph(CH ₃)CH	H	H
U-22	O	Ph(CH ₃) ₂ C	H	H
U-23	O	Ph	H	H
U-24	O	2-Cl-Ph	H	H
U-25	O	3-Cl-Ph	H	H
U-26	O	4-Cl-Ph	H	H
U-27	S	H	H	H
U-28	S	n-C ₃ H ₇	H	H
U-29	S	iso-C ₃ H ₇	H	H
U-30	S	n-C ₄ H ₉	H	H
U-31	S	iso-C ₄ H ₉	H	H

Compound	U	R ⁴	R ⁹	R ¹⁰
U-32	S	sec-C4H9	H	H
U-33	S	tert-C4H9	H	H
U-34	S	n-C5H11	H	H
U-35	S	n-C6H13	H	H
U-36	S	cyclo-C3H5	H	H
U-37	S	cyclo-C5H9	H	H
U-38	S	cyclo-C6H11	H	H
U-39	S	CH ₂ CH=CH ₂	H	H
U-40	S	CH ₂ C(CH ₃)=CH ₂	H	H
U-41	S	CH(CH ₃)CH=CH ₂	H	H
U-42	S	CH ₂ CH=CHCH ₃	H	H
U-43	S	CH ₂ CCH	H	H
U-44	S	CH ₂ CCCH ₃	H	H
U-45	S	CH(CH ₃)CCH	H	H
U-46	S	PhCH ₂	H	H
U-47	S	Ph(CH ₃)CH	H	H
U-48	S	Ph(CH ₃) ₂ C	H	H
U-49	S	Ph	H	H
U-50	S	2-Cl-Ph	H	H
U-51	S	3-Cl-Ph	H	H
U-52	S	4-Cl-Ph	H	H

Table 7

Compounds of formula (1D):



(1D)

5

Compound	U	R ⁴	R ¹¹
V-1	O	H	H
V-2	O	CH ₃	H
V-3	O	C ₂ H ₅	H
V-4	O	n-C ₃ H ₇	H
V-5	O	iso-C ₃ H ₇	H
V-6	O	n-C ₄ H ₉	H

Compound	U	R ⁴	R ¹¹
V-7	O	iso-C ₄ H ₉	H
V-8	O	sec-C ₄ H ₉	H
V-9	O	tert-C ₄ H ₉	H
V-10	O	n-C ₅ H ₁₁	H
V-11	O	n-C ₆ H ₁₃	H
V-12	O	cyclo-C ₃ H ₅	H
V-13	O	cyclo-C ₅ H ₉	H
V-14	O	cyclo-C ₆ H ₁₁	H
V-15	O	CH ₂ CH=CH ₂	H
V-16	O	CH ₂ C(CH ₃)=CH ₂	H
V-17	O	CH(CH ₃)CH=CH ₂	H
V-18	O	CH ₂ CH=CHCH ₃	H
V-19	O	CH ₂ CCH	H
V-20	O	CH ₂ CCCH ₃	H
V-21	O	CH(CH ₃)CCH	H
V-22	O	PhCH ₂	H
V-23	O	Ph(CH ₃)CH	H
V-24	O	Ph(CH ₃) ₂ C	H
V-25	O	Ph	H
V-26	O	2-Cl-Ph	H
V-27	O	3-Cl-Ph	H
V-28	O	4-Cl-Ph	H
V-29	S	H	H
V-30	S	CH ₃	H
V-31	S	C ₂ H ₅	H
V-32	S	n-C ₃ H ₇	H
V-33	S	iso-C ₃ H ₇	H
V-34	S	n-C ₄ H ₉	H
V-35	S	iso-C ₄ H ₉	H
V-36	S	sec-C ₄ H ₉	H
V-37	S	tert-C ₄ H ₉	H
V-38	S	n-C ₅ H ₁₁	H
V-39	S	n-C ₆ H ₁₃	H
V-40	S	cyclo-C ₃ H ₅	H
V-41	S	cyclo-C ₅ H ₉	H
V-42	S	cyclo-C ₆ H ₁₁	H
V-43	S	CH ₂ CH=CH ₂	H
V-44	S	CH ₂ C(CH ₃)=CH ₂	H
V-45	S	CH(CH ₃)CH=CH ₂	H
V-46	S	CH ₂ CH=CHCH ₃	H
V-47	S	CH ₂ CCH	H
V-48	S	CH ₂ CCCH ₃	H

Compound	U	R ⁴	R ¹¹
V-49	S	CH(CH ₃)CCH	H
V-50	S	PhCH ₂	H
V-51	S	Ph(CH ₃)CH	H
V-52	S	Ph(CH ₃) ₂ C	H
V-53	S	Ph	H
V-54	S	2-Cl-Ph	H
V-55	S	3-Cl-Ph	H
V-56	S	4-Cl-Ph	H

Table 8

Compounds of formula (I) wherein R¹ is -C(=U)NR³R⁴, U is NR¹⁸ and m is zero.

Compound	R ³	R ⁴	R ²	R ¹⁸
W-1	CH ₃	H	H	H
W-2	C ₂ H ₅	H	H	H
W-3	n-C ₃ H ₇	H	H	H
W-4	iso-C ₃ H ₇	H	H	H
W-5	n-C ₄ H ₉	H	H	H
W-6	iso-C ₄ H ₉	H	H	H
W-7	tert-C ₄ H ₉	H	H	H
W-8	n-C ₅ H ₁₁	H	H	H
W-9	(CH ₃) ₃ CCCH ₂	H	H	H
W-10	n-C ₆ H ₁₃	H	H	H
W-11	CH ₂ =CHCH ₂	H	H	H
W-12	CHCCH ₂	H	H	H
W-13	cyclo-C ₃ H ₅	H	H	H
W-14	cyclo-C ₅ H ₉	H	H	H
W-15	cyclo-C ₆ H ₁₁	H	H	H
W-16	PhCH ₂	H	H	H
W-17	PhCH(CH ₃)	H	H	H
W-18	CH ₃ NH	H	H	H
W-19	C ₂ H ₅ NH	H	H	H
W-20	n-C ₃ H ₇ NH	H	H	H
W-21	iso-C ₃ H ₇ NH	H	H	H
W-22	n-C ₄ H ₉ NH	H	H	H
W-23	tert-C ₄ H ₉ NH	H	H	H
W-24	n-C ₅ H ₁₁ NH	H	H	H
W-25	n-C ₆ H ₁₃ NH	H	H	H
W-26	PhCH ₂ NH	H	H	H
W-27	PhNH	H	H	H
W-28	Ph	H	H	H
W-29	2-F-Ph	H	H	H
W-30	3-F-Ph	H	H	H

Compound	R ³	R ⁴	R ²	R ¹⁸
W-31	4-F-Ph	H	H	H
W-32	2-Cl-Ph	H	H	H
W-33	3-Cl-Ph	H	H	H
W-34	4-Cl-Ph	H	H	H
W-35	2-CF ₃ -Ph	H	H	H
W-36	3-CF ₃ -Ph	H	H	H
W-37	4-CF ₃ -Ph	H	H	H
W-38	2-CH ₃ -Ph	H	H	H
W-39	3-CH ₃ -Ph	H	H	H
W-40	4-CH ₃ -Ph	H	H	H
W-41	2-CH ₃ O-Ph	H	H	H
W-42	3-CH ₃ O-Ph	H	H	H
W-43	4-CH ₃ O-Ph	H	H	H
W-44	CF ₃ CH ₂	H	H	H
W-45	ClCH ₂ CH ₂	H	H	H
W-46	ClCH ₂ CH ₂ CH ₂	H	H	H
W-47	CH ₃ OCH ₂ CH ₂	H	H	H
W-48	CH ₃ CH ₂ OCH ₂ CH ₂	H	H	H
W-49	CH ₃ OCH ₂ CH ₂ CH ₂	H	H	H
W-50	C ₂ H ₅ OCH ₂ CH ₂ CH ₂	H	H	H
W-51	n-C ₄ H ₉ OCH ₂ CH ₂ CH ₂	H	H	H
W-52	CH ₃ OCH(CH ₃)CH ₂ CH ₂	H	H	H
W-53	(CH ₃ O) ₂ CHCH ₂	H	H	H
W-54	HOCH ₂ CH ₂	H	H	H
W-55	HOCH ₂ CH ₂ CH ₂	H	H	H
W-56	CH ₃ SCH ₂ CH ₂	H	H	H
W-57	CH ₃ CH ₂ SCH ₂ CH ₂	H	H	H
W-58	CH ₃ SCH ₂ CH ₂ CH ₂	H	H	H
W-59	C ₂ H ₅ SCH ₂ CH ₂ CH ₂	H	H	H
W-60	CH ₂ CH ₂ CH ₂ CH ₂		H	H
W-61	CH ₂ CH ₂ CH ₂ CH ₂ CH ₂		H	H
W-62	CH ₂ CH ₂ OCH ₂ CH ₂		H	H
W-63	CH ₂ CH ₂ SCH ₂ CH ₂		H	H
W-64	CH ₂ CH ₂ NHCH ₂ CH ₂		H	H
W-65	CH ₂ CH ₂ N(CH ₃)CH ₂ CH ₂		H	H
W-66	N=CHCH ₂ CH ₂		H	H
W-67	N=CHCH=CH		H	H
W-68	CH ₃	CH ₃	H	H
W-69	C ₂ H ₅	CH ₃	H	H
W-70	n-C ₃ H ₇	CH ₃	H	H
W-71	iso-C ₃ H ₇	CH ₃	H	H
W-72	n-C ₄ H ₉	CH ₃	H	H
W-73	iso-C ₄ H ₉	CH ₃	H	H

Compound	R ³	R ⁴	R ²	R ¹⁸
W-74	tert-C ₄ H ₉	CH ₃	H	H
W-75	n-C ₅ H ₁₁	CH ₃	H	H
W-76	n-C ₆ H ₁₃	CH ₃	H	H
W-77	CH ₂ =CHCH ₂	CH ₃	H	H
W-78	CHCCH ₂	CH ₃	H	H
W-79	cyclo-C ₃ H ₅	CH ₃	H	H
W-80	cyclo-C ₅ H ₉	CH ₃	H	H
W-81	cyclo-C ₆ H ₁₁	CH ₃	H	H
W-82	PhCH ₂	CH ₃	H	H
W-83	CH ₃ NH	CH ₃	H	H
W-84	C ₂ H ₅ NH	CH ₃	H	H
W-85	n-C ₃ H ₇ NH	CH ₃	H	H
W-86	iso-C ₃ H ₇ NH	CH ₃	H	H
W-87	n-C ₄ H ₉ NH	CH ₃	H	H
W-88	tert-C ₄ H ₉ NH	CH ₃	H	H
W-89	n-C ₅ H ₁₁ NH	CH ₃	H	H
W-90	n-C ₆ H ₁₃ NH	CH ₃	H	H
W-91	PhCH ₂ NH	CH ₃	H	H
W-92	PhNH	CH ₃	H	H
W-93	Ph	CH ₃	H	H
W-94	2-F-Ph	CH ₃	H	H
W-95	3-F-Ph	CH ₃	H	H
W-96	4-F-Ph	CH ₃	H	H
W-97	2-Cl-Ph	CH ₃	H	H
W-98	3-Cl-Ph	CH ₃	H	H
W-99	4-Cl-Ph	CH ₃	H	H
W-100	2-CF ₃ -Ph	CH ₃	H	H
W-101	3-CF ₃ -Ph	CH ₃	H	H
W-102	4-CF ₃ -Ph	CH ₃	H	H
W-103	2-CH ₃ -Ph	CH ₃	H	H
W-104	3-CH ₃ -Ph	CH ₃	H	H
W-105	4-CH ₃ -Ph	CH ₃	H	H
W-106	2-CH ₃ O-Ph	CH ₃	H	H
W-107	3-CH ₃ O-Ph	CH ₃	H	H
W-108	4-CH ₃ O-Ph	CH ₃	H	H
W-109	CF ₃ CH ₂	CH ₃	H	H
W-110	ClCH ₂ CH ₂	CH ₃	H	H
W-111	ClCH ₂ CH ₂ CH ₂	CH ₃	H	H
W-112	CH ₃ OCH ₂ CH ₂	CH ₃	H	H
W-113	CH ₃ CH ₂ OCH ₂ CH ₂	CH ₃	H	H
W-114	CH ₃ OCH ₂ CH ₂ CH ₂	CH ₃	H	H
W-115	C ₂ H ₅ OCH ₂ CH ₂ CH ₂	CH ₃	H	H
W-116	n-C ₄ H ₉ OCH ₂ CH ₂ CH ₂	CH ₃	H	H

Compound	R ³	R ⁴	R ²	R ¹⁸
W-117	CH ₃ OCH(CH ₃)CH ₂ CH ₂	CH ₃	H	H
W-118	(CH ₃ O) ₂ CHCH ₂	CH ₃	H	H
W-119	HOCH ₂ CH ₂	CH ₃	H	H
W-120	HOCH ₂ CH ₂ CH ₂	CH ₃	H	H
W-121	CH ₃	C ₂ H ₅	H	H
W-122	C ₂ H ₅	C ₂ H ₅	H	H
W-123	n-C ₃ H ₇	C ₂ H ₅	H	H
W-124	iso-C ₃ H ₇	C ₂ H ₅	H	H
W-125	CH ₂ =CHCH ₂	C ₂ H ₅	H	H
W-126	CHCCH ₂	C ₂ H ₅	H	H
W-127	cyclo-C ₃ H ₅	C ₂ H ₅	H	H
W-128	PhCH ₂	C ₂ H ₅	H	H
W-129	CH ₃ NH	C ₂ H ₅	H	H
W-130	C ₂ H ₅ NH	C ₂ H ₅	H	H
W-131	PhCH ₂ NH	C ₂ H ₅	H	H
W-132	PhNH	C ₂ H ₅	H	H
W-133	Ph	C ₂ H ₅	H	H
W-134	2-Cl-Ph	C ₂ H ₅	H	H
W-135	3-Cl-Ph -	C ₂ H ₅	H	H
W-136	4-Cl-Ph	C ₂ H ₅	H	H
W-137	2-CF ₃ -Ph	C ₂ H ₅	H	H
W-138	3-CF ₃ -Ph	C ₂ H ₅	H	H
W-139	4-CF ₃ -Ph	C ₂ H ₅	H	H
W-140	2-CH ₃ O-Ph	C ₂ H ₅	H	H
W-141	3-CH ₃ O-Ph	C ₂ H ₅	H	H
W-142	4-CH ₃ O-Ph	C ₂ H ₅	H	H
W-143	CF ₃ CH ₂	C ₂ H ₅	H	H
W-144	ClCH ₂ CH ₂	C ₂ H ₅	H	H
W-145	ClCH ₂ CH ₂ CH ₂	C ₂ H ₅	H	H
W-146	CH ₃ OCH ₂ CH ₂	C ₂ H ₅	H	H
W-147	CH ₃ CH ₂ OCH ₂ CH ₂	C ₂ H ₅	H	H
W-148	CH ₃ OCH ₂ CH ₂ CH ₂	C ₂ H ₅	H	H
W-149	C ₂ H ₅ OCH ₂ CH ₂ CH ₂	C ₂ H ₅	H	H
W-150	n-C ₄ H ₉ OCH ₂ CH ₂ CH ₂	C ₂ H ₅	H	H
W-151	CH ₃ OCH(CH ₃)CH ₂ CH ₂	C ₂ H ₅	H	H
W-152	(CH ₃ O) ₂ CHCH ₂	C ₂ H ₅	H	H
W-153	HOCH ₂ CH ₂	C ₂ H ₅	H	H
W-154	HOCH ₂ CH ₂ CH ₂	C ₂ H ₅	H	H
W-155	CH ₃	H	H	CH ₃
W-156	C ₂ H ₅	H	H	CH ₃
W-157	n-C ₃ H ₇	H	H	CH ₃
W-158	iso-C ₃ H ₇	H	H	CH ₃
W-159	tert-C ₄ H ₉	H	H	CH ₃

Compound	R ³	R ⁴	R ²	R ¹⁸
W-160	CH ₂ =CHCH ₂	H	H	CH ₃
W-161	CHCCH ₂	H	H	CH ₃
W-162	cyclo-C ₃ H ₅	H	H	CH ₃
W-163	PhCH ₂	H	H	CH ₃
W-164	CH ₃ NH	H	H	CH ₃
W-165	C ₂ H ₅ NH	H	H	CH ₃
W-166	n-C ₃ H ₇ NH	H	H	CH ₃
W-167	iso-C ₃ H ₇ NH	H	H	CH ₃
W-168	PhCH ₂ NH	H	H	CH ₃
W-169	PhNH	H	H	CH ₃
W-170	Ph	H	H	CH ₃
W-171	2-Cl-Ph	H	H	CH ₃
W-172	3-Cl-Ph	H	H	CH ₃
W-173	4-Cl-Ph	H	H	CH ₃
W-174	CH ₃ OCH ₂ CH ₂	H	H	CH ₃
W-175	CH ₃ CH ₂ OCH ₂ CH ₂	H	H	CH ₃
W-176	CH ₃ OCH ₂ CH ₂ CH ₂	H	H	CH ₃
W-177	C ₂ H ₅ OCH ₂ CH ₂ CH ₂	H	H	CH ₃
W-178	n-C ₄ H ₉ OCH ₂ CH ₂ CH ₂	H	H	CH ₃
W-179	CH ₃ OCH(CH ₃)CH ₂ CH ₂	H	H	CH ₃
W-180	(CH ₃ O) ₂ CHCH ₂	H	H	CH ₃
W-181	HOCH ₂ CH ₂	H	H	CH ₃
W-182	HOCH ₂ CH ₂ CH ₂	H	H	CH ₃
W-183	CH ₂ CH ₂ CH ₂ CH ₂	H	H	CH ₃
W-184	CH ₂ CH ₂ CH ₂ CH ₂ CH ₂	H	H	CH ₃
W-185	CH ₂ CH ₂ OCH ₂ CH ₂	H	H	CH ₃
W-186	CH ₂ CH ₂ SCH ₂ CH ₂	H	H	CH ₃
W-187	CH ₂ CH ₂ NHCH ₂ CH ₂	H	H	CH ₃
W-188	CH ₂ CH ₂ N(CH ₃)CH ₂ CH ₂	H	H	CH ₃
W-189	N=CHCH ₂ CH ₂	H	H	CH ₃
W-190	CH ₃	H	H	tert-C ₄ H ₉
W-191	C ₂ H ₅	H	H	tert-C ₄ H ₉
W-192	n-C ₃ H ₇	H	H	tert-C ₄ H ₉
W-193	iso-C ₃ H ₇	H	H	tert-C ₄ H ₉
W-194	tert-C ₄ H ₉	H	H	tert-C ₄ H ₉
W-195	CH ₂ =CHCH ₂	H	H	tert-C ₄ H ₉
W-196	CHCCH ₂	H	H	tert-C ₄ H ₉
W-197	cyclo-C ₃ H ₅	H	H	tert-C ₄ H ₉
W-198	PhCH ₂	H	H	tert-C ₄ H ₉
W-199	CH ₃ NH	H	H	tert-C ₄ H ₉
W-200	PhCH ₂ NH	H	H	tert-C ₄ H ₉
W-201	PhNH	H	H	tert-C ₄ H ₉
W-202	Ph	H	H	tert-C ₄ H ₉

Compound	R ³	R ⁴	R ²	R ¹⁸
W-203	2-Cl-Ph	H	H	tert-C4H9
W-204	3-Cl-Ph	H	H	tert-C4H9
W-205	4-Cl-Ph	H	H	tert-C4H9
W-206	CH3OCH2CH2	H	H	tert-C4H9
W-207	CH3CH2OCH2CH2	H	H	tert-C4H9
W-208	CH3OCH2CH2CH2	H	H	tert-C4H9
W-209	C2H5OCH2CH2CH2	H	H	tert-C4H9
W-210	(CH3O)2CHCH2	H	H	tert-C4H9
W-211	HOCH2CH2	H	H	tert-C4H9
W-212	HOCH2CH2CH2	H	H	tert-C4H9
W-213	CH2CH2CH2CH2	H	H	tert-C4H9
W-214	CH2CH2CH2CH2CH2	H	H	tert-C4H9
W-215	CH2CH2OCH2CH2	H	H	tert-C4H9
W-216	CH2CH2SCH2CH2	H	H	tert-C4H9
W-217	CH2CH2NHCH2CH2	H	H	tert-C4H9
W-218	CH2CH2N(CH3)CH2CH2	H	H	tert-C4H9
W-219	N=CHCH2CH2	H	H	tert-C4H9
W-220	CH3	H	H	OH
W-221	C2H5	H	H	OH
W-222	n-C3H7	H	H	OH
W-223	iso-C3H7	H	H	OH
W-224	tert-C4H9	H	H	OH
W-225	CH2=CHCH2	H	H	OH
W-226	CHCCH2	H	H	OH
W-227	cyclo-C3H5	H	H	OH
W-228	PhCH2	H	H	OH
W-229	CH3NH	H	H	OH
W-230	C2H5NH	H	H	OH
W-231	PhCH2NH	H	H	OH
W-232	PhNH	H	H	OH
W-233	Ph	H	H	OH
W-234	2-Cl-Ph	H	H	OH
W-235	3-Cl-Ph	H	H	OH
W-236	4-Cl-Ph	H	H	OH
W-237	CH3OCH2CH2	H	H	OH
W-238	CH3CH2OCH2CH2	H	H	OH
W-239	CH3OCH2CH2CH2	H	H	OH
W-240	C2H5OCH2CH2CH2	H	H	OH
W-241	n-C4H9OCH2CH2CH2	H	H	OH
W-242	CH3OCH(CH3)CH2CH2	H	H	OH
W-243	(CH3O)2CHCH2	H	H	OH
W-244	HOCH2CH2	H	H	OH
W-245	HOCH2CH2CH2	H	H	OH

Compound	R ³	R ⁴	R ²	R ¹⁸
W-246	CH ₂ CH ₂ CH ₂ CH ₂		H	OH
W-247	CH ₂ CH ₂ CH ₂ CH ₂ CH ₂		H	OH
W-248	CH ₂ CH ₂ OCH ₂ CH ₂		H	OH
W-249	CH ₂ CH ₂ SCH ₂ CH ₂		H	OH
W-250	CH ₂ CH ₂ NHCH ₂ CH ₂		H	OH
W-251	CH ₂ CH ₂ N(CH ₃)CH ₂ CH ₂		H	OH
W-252	N=CHCH ₂ CH ₂		H	OH
W-253	N=CHCH=CH		H	OH
W-254	CH ₃	H	H	CH ₃ O
W-255	C ₂ H ₅	H	H	CH ₃ O
W-256	n-C ₃ H ₇	H	H	CH ₃ O
W-257	iso-C ₃ H ₇	H	H	CH ₃ O
W-258	tert-C ₄ H ₉	H	H	CH ₃ O
W-259	CH ₂ =CHCH ₂	H	H	CH ₃ O
W-260	CHCCH ₂	H	H	CH ₃ O
W-261	cyclo-C ₃ H ₅	H	H	CH ₃ O
W-262	PhCH ₂	H	H	CH ₃ O
W-263	CH ₃ NH	H	H	CH ₃ O
W-264	C ₂ H ₅ NH	H	H	CH ₃ O
W-265	PhCH ₂ NH	H	H	CH ₃ O
W-266	PhNH	H	H	CH ₃ O
W-267	Ph	H	H	CH ₃ O
W-268	2-Cl-Ph	H	H	CH ₃ O
W-269	3-Cl-Ph	H	H	CH ₃ O
W-270	4-Cl-Ph	H	H	CH ₃ O
W-271	CH ₃ OCH ₂ CH ₂	H	H	CH ₃ O
W-272	CH ₃ CH ₂ OCH ₂ CH ₂	H	H	CH ₃ O
W-273	CH ₃ OCH ₂ CH ₂ CH ₂	H	H	CH ₃ O
W-274	C ₂ H ₅ OCH ₂ CH ₂ CH ₂	H	H	CH ₃ O
W-275	n-C ₄ H ₉ OCH ₂ CH ₂ CH ₂	H	H	CH ₃ O
W-276	CH ₃ OCH(CH ₃)CH ₂ CH ₂	H	H	CH ₃ O
W-277	(CH ₃ O) ₂ CHCH ₂	H	H	CH ₃ O
W-278	HOCH ₂ CH ₂	H	H	CH ₃ O
W-279	HOCH ₂ CH ₂ CH ₂	H	H	CH ₃ O
W-280	CH ₃ SCH ₂ CH ₂	H	H	CH ₃ O
W-281	CH ₃ CH ₂ SCH ₂ CH ₂	H	H	CH ₃ O
W-282	CH ₃ SCH ₂ CH ₂ CH ₂	H	H	CH ₃ O
W-283	C ₂ H ₅ SCH ₂ CH ₂ CH ₂	H	H	CH ₃ O

Table 9

Compounds of formula (I) wherein R¹ is -C(=V)OR^{3a} and m is zero.

Compound	V	R ^{3a}	R ²
X-1	O	cyclo-C ₃ H ₅	H
X-2	O	cyclo-C ₅ H ₉	H
X-3	O	cyclo-C ₆ H ₁₁	H
X-4	O	CH ₃ NH	H
X-5	O	C ₂ H ₅ NH	H
X-6	O	n-C ₃ H ₇ NH	H
X-7	O	iso-C ₃ H ₇ NH	H
X-8	O	n-C ₄ H ₉ NH	H
X-9	O	tert-C ₄ H ₉ NH	H
X-10	O	n-C ₅ H ₁₁ NH	H
X-11	O	n-C ₆ H ₁₃ NH	H
X-12	O	PhCH ₂ NH	H
X-13	O	PhNH	H
X-14	O	CF ₃ CH ₂	H
X-15	O	ClCH ₂ CH ₂	H
X-16	O	ClCH ₂ CH ₂ CH ₂	H
X-17	O	CH ₃ OCH ₂ CH ₂	H
X-18	O	CH ₃ CH ₂ OCH ₂ CH ₂	H
X-19	O	CH ₃ OCH ₂ CH ₂ CH ₂	H
X-20	O	C ₂ H ₅ OCH ₂ CH ₂ CH ₂	H
X-21	O	n-C ₄ H ₉ OCH ₂ CH ₂ CH ₂	H
X-22	O	CH ₃ OCH(CH ₃)CH ₂ CH ₂	H
X-23	O	(CH ₃ O) ₂ CHCH ₂	H
X-24	O	HOCH ₂ CH ₂	H
X-25	O	HOCH ₂ CH ₂ CH ₂	H
X-26	O	CH ₃ SCH ₂ CH ₂	H
X-27	O	CH ₃ CH ₂ SCH ₂ CH ₂	H
X-28	O	CH ₃ SCH ₂ CH ₂ CH ₂	H
X-29	O	C ₂ H ₅ SCH ₂ CH ₂ CH ₂	H
X-30	O	CH ₃ (cyclo-C ₃ H ₅)CH	H
X-31	O	NCCH ₂ CH ₂	H
X-32	S	cyclo-C ₃ H ₅	H
X-33	S	cyclo-C ₅ H ₉	H
X-34	S	cyclo-C ₆ H ₁₁	H
X-35	S	CH ₃ NH	H
X-36	S	C ₂ H ₅ NH	H
X-37	S	n-C ₃ H ₇ NH	H
X-38	S	iso-C ₃ H ₇ NH	H
X-39	S	n-C ₄ H ₉ NH	H
X-40	S	tert-C ₄ H ₉ NH	H

Compound	V	R ^{3a}	R ²
X-41	S	n-C ₅ H ₁₁ NH	H
X-42	S	n-C ₆ H ₁₃ NH	H
X-43	S	PhCH ₂ NH	H
X-44	S	PhNH	H
X-45	S	CF ₃ CH ₂	H
X-46	S	ClCH ₂ CH ₂	H
X-47	S	ClCH ₂ CH ₂ CH ₂	H
X-48	S	CH ₃ OCH ₂ CH ₂	H
X-49	S	CH ₃ CH ₂ OCH ₂ CH ₂	H
X-50	S	CH ₃ OCH ₂ CH ₂ CH ₂	H
X-51	S	C ₂ H ₅ OCH ₂ CH ₂ CH ₂	H
X-52	S	n-C ₄ H ₉ OCH ₂ CH ₂ CH ₂	H
X-53	S	CH ₃ OCH(CH ₃)CH ₂ CH ₂	H
X-54	S	(CH ₃ O) ₂ CHCH ₂	H
X-55	S	HOCH ₂ CH ₂	H
X-56	S	HOCH ₂ CH ₂ CH ₂	H
X-57	S	CH ₃ SCH ₂ CH ₂	H
X-58	S	CH ₃ CH ₂ SCH ₂ CH ₂	H
X-59	S	CH ₃ SCH ₂ CH ₂ CH ₂	H
X-60	S	C ₂ H ₅ SCH ₂ CH ₂ CH ₂	H
X-61	S	CH ₃ (cyclo-C ₃ H ₅)CH	H
X-62	S	NCCH ₂ CH ₂	H
X-63	O	cyclo-C ₃ H ₅	CH ₃
X-64	O	cyclo-C ₅ H ₉	CH ₃
X-65	O	cyclo-C ₆ H ₁₁	CH ₃
X-66	O	CH ₃ NH	CH ₃
X-67	O	C ₂ H ₅ NH	CH ₃
X-68	O	n-C ₃ H ₇ NH	CH ₃
X-69	O	iso-C ₃ H ₇ NH	CH ₃
X-70	O	n-C ₄ H ₉ NH	CH ₃
X-71	O	tert-C ₄ H ₉ NH	CH ₃
X-72	O	n-C ₅ H ₁₁ NH	CH ₃
X-73	O	n-C ₆ H ₁₃ NH	CH ₃
X-74	O	PhCH ₂ NH	CH ₃
X-75	O	PhNH	CH ₃
X-76	O	CF ₃ CH ₂	CH ₃
X-77	O	ClCH ₂ CH ₂	CH ₃
X-78	O	ClCH ₂ CH ₂ CH ₂	CH ₃
X-79	O	CH ₃ OCH ₂ CH ₂	CH ₃
X-80	O	CH ₃ CH ₂ OCH ₂ CH ₂	CH ₃
X-81	O	CH ₃ OCH ₂ CH ₂ CH ₂	CH ₃
X-82	O	C ₂ H ₅ OCH ₂ CH ₂ CH ₂	CH ₃

Compound	V	R ^{3a}	R ²
X-83	O	n-C4H9OCH2CH2CH2	CH3
X-84	O	CH3OCH(CH3)CH2CH2	CH3
X-85	O	(CH3O)2CHCH2	CH3
X-86	O	HOCH2CH2	CH3
X-87	O	HOCH2CH2CH2	CH3
X-88	O	CH3SCH2CH2	CH3
X-89	O	CH3CH2SCH2CH2	CH3
X-90	O	CH3SCH2CH2CH2	CH3
X-91	O	C2H5SCH2CH2CH2	CH3
X-92	O	CH3(cyclo-C3H5)CH	CH3
X-93	O	NCCH2CH2	CH3
X-94	S	cyclo-C3H5	CH3
X-95	S	cyclo-C5H9	CH3
X-96	S	cyclo-C6H11	CH3
X-97	S	CH3NH	CH3
X-98	S	C2H5NH	CH3
X-99	S	n-C3H7NH	CH3
X-100	S	iso-C3H7NH	CH3
X-101	S	n-C4H9NH	CH3
X-102	S	tert-C4H9NH	CH3
X-103	S	n-C5H11NH	CH3
X-104	S	n-C6H13NH	CH3
X-105	S	PhCH2NH	CH3
X-106	S	PhNH	CH3
X-107	S	CF3CH2	CH3
X-108	S	ClCH2CH2	CH3
X-109	S	ClCH2CH2CH2	CH3
X-110	S	CH3OCH2CH2	CH3
X-111	S	CH3CH2OCH2CH2	CH3
X-112	S	CH3OCH2CH2CH2	CH3
X-113	S	C2H5OCH2CH2CH2	CH3
X-114	S	n-C4H9OCH2CH2CH2	CH3
X-115	S	CH3OCH(CH3)CH2CH2	CH3
X-116	S	(CH3O)2CHCH2	CH3
X-117	S	HOCH2CH2	CH3
X-118	S	HOCH2CH2CH2	CH3
X-119	S	CH3SCH2CH2	CH3
X-120	S	CH3CH2SCH2CH2	CH3
X-121	S	CH3SCH2CH2CH2	CH3
X-122	S	C2H5SCH2CH2CH2	CH3
X-123	S	CH3(cyclo-C3H5)CH	CH3
X-124	S	NCCH2CH2	CH3

Compound	V	R ^{3a}	R ²
X-125	O	cyclo-C ₃ H ₅	C ₂ H ₅
X-126	O	CH ₃ NH	C ₂ H ₅
X-127	O	C ₂ H ₅ NH	C ₂ H ₅
X-128	O	n-C ₃ H ₇ NH	C ₂ H ₅
X-129	O	iso-C ₃ H ₇ NH	C ₂ H ₅
X-130	O	n-C ₄ H ₉ NH	C ₂ H ₅
X-131	O	tert-C ₄ H ₉ NH	C ₂ H ₅
X-132	O	PhCH ₂ NH	C ₂ H ₅
X-133	O	PhNH	C ₂ H ₅
X-134	O	CF ₃ CH ₂	C ₂ H ₅
X-135	O	ClCH ₂ CH ₂	C ₂ H ₅
X-136	O	ClCH ₂ CH ₂ CH ₂	C ₂ H ₅
X-137	O	CH ₃ OCH ₂ CH ₂	C ₂ H ₅
X-138	O	CH ₃ CH ₂ OCH ₂ CH ₂	C ₂ H ₅
X-139	O	CH ₃ OCH ₂ CH ₂ CH ₂	C ₂ H ₅
X-140	O	C ₂ H ₅ OCH ₂ CH ₂ CH ₂	C ₂ H ₅
X-141	O	n-C ₄ H ₉ OCH ₂ CH ₂ CH ₂	C ₂ H ₅
X-142	O	CH ₃ OCH(CH ₃)CH ₂ CH ₂	C ₂ H ₅
X-143	O	(CH ₃ O) ₂ CHCH ₂	C ₂ H ₅
X-144	O	HOCH ₂ CH ₂	C ₂ H ₅
X-145	O	HOCH ₂ CH ₂ CH ₂	C ₂ H ₅
X-146	O	CH ₃ (cyclo-C ₃ H ₅)CH	C ₂ H ₅
X-147	O	NCCH ₂ CH ₂	C ₂ H ₅
X-148	S	cyclo-C ₃ H ₅	C ₂ H ₅
X-149	S	CH ₃ NH	C ₂ H ₅
X-150	S	C ₂ H ₅ NH	C ₂ H ₅
X-151	S	n-C ₃ H ₇ NH	C ₂ H ₅
X-152	S	iso-C ₃ H ₇ NH	C ₂ H ₅
X-153	S	n-C ₄ H ₉ NH	C ₂ H ₅
X-154	S	tert-C ₄ H ₉ NH	C ₂ H ₅
X-155	S	PhCH ₂ NH	C ₂ H ₅
X-156	S	PhNH	C ₂ H ₅
X-157	S	CF ₃ CH ₂	C ₂ H ₅
X-158	S	ClCH ₂ CH ₂	C ₂ H ₅
X-159	S	ClCH ₂ CH ₂ CH ₂	C ₂ H ₅
X-160	S	CH ₃ OCH ₂ CH ₂	C ₂ H ₅
X-161	S	CH ₃ CH ₂ OCH ₂ CH ₂	C ₂ H ₅
X-162	S	CH ₃ OCH ₂ CH ₂ CH ₂	C ₂ H ₅
X-163	S	C ₂ H ₅ OCH ₂ CH ₂ CH ₂	C ₂ H ₅
X-164	S	n-C ₄ H ₉ OCH ₂ CH ₂ CH ₂	C ₂ H ₅
X-165	S	CH ₃ OCH(CH ₃)CH ₂ CH ₂	C ₂ H ₅
X-166	S	(CH ₃ O) ₂ CHCH ₂	C ₂ H ₅

Compound	V	R ^{3a}	R ²
X-167	S	HOCH ₂ CH ₂	C ₂ H ₅
X-168	S	HOCH ₂ CH ₂ CH ₂	C ₂ H ₅
X-169	S	CH ₃ (cyclo-C ₃ H ₅)CH	C ₂ H ₅
X-170	S	NCCH ₂ CH ₂	C ₂ H ₅

Table 10

¹H-NMR spectral details for representative Examples from the above Tables.

Nmr spectra were measured in deuteriochloroform unless otherwise stated.

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Cpd	¹ H-NMR
A-2	3.7-3.9(2H, m), 5.1-5.2(2H, m), 5.7-5.9(1H, m), 7.63(1H, d), 8.46(1H, brs), 8.83(1H, d), 8.91(1H, d), 10.70(1H, brs)
A-18	2.26(1H, t), 4.02(2H, dd), 7.66(1H, d), 8.34(1H, brs), 8.91(1H, s), 8.94(1H, d), 10.03(1H, brs)
A-24	0.5-0.6(1H, m), 0.7-0.8(1H, m), 2.6-2.7(1H, m), 7.65(1H, d), 8.33(1H, brs), 8.89(1H, s), 8.93(1H, d), 9.68(1H, brs)
A-26	9.83(1H,s), 8.93(1H,d), 8.89(1H,s), 8.40(1H,d), 7.65(1H,d), 4.12(1H,dt), 2.27(2H,m), 1.98(2H,m), 1.73(2H,m)
A-28	1.4-2.0(4H, m), 3.8-4.1(1H, m), 7.64(1H, d), 8.28(1H, brd), 8.90(1H, s), 8.91(1H, d)
A-30	1.2-1.4(5H, m), 1.5-1.9(5H, m), 3.4-3.6(1H, m), 7.63(1H, d), 8.22(1H, brd), 8.89(1H, s), 8.91(1H, d)
A-32	9.68(1H,s), 8.93(1H,d), 8.90(1H,s), 8.38(1H,t), 7.65(1H,d), 3.10(2H,t), 1.00(1H,m), 0.53(2H,m), 0.22(1H,m)
A-37	4.39(2H, d), 7.1-7.4(5H, m), 7.62(1H, d), 8.69(1H, m), 8.7-9.0(3H, m)
A-38	1.48(3H, d), 4.7-4.9(1H, m), 7.1-7.4(5H, m), 7.58(1H, d), 8.78(1H, brd), 8.86(1H, s), 8.90(1H, d)
A-39	2.80(2H, t), 3.42(2H, t), 7.1-7.4(5H, m), 7.62(1H, d), 8.3-8.5(1H, m), 8.89(1H, s), 8.90(1H, d)
A-62	3.80(3H, s), 4.31(1H, s), 6.86(2H, d), 7.16(2H, d), 7.62(1H, d), 8.62(1H,

Cpd	¹ H-NMR
	brs), 8.8-9.0(2H, m), 10.26(1H, s)
A-64	3.83(3H, s), 7.66(1H, d), 8.89(1H, s), 8.94(1H, d), 9.21(1H, brs), 10.60(1H, brs)
A-65	10.54(1H,s), 9.51(1H,s), 8.94(1H,d), 8.89(1H,s), 7.65(1H,d)4.01(2H,q), 1.28(3H,t)
A-67	10.39(1H), 8.90-9.05(2H), 7.81(1H), 4.18(1H), 1.24(6H)
A-71	1.35(9H, s), 7.62(1H, d), 8.66(1H, s), 8.78(1H, d)
A-74	10.58(1H,s), 10.04(1H,s), 8.92(1H,d), 8.89(1H,s), 7.65(1H,d), 5.94(1H,m), 5.38(1H,d), 5.35(1H,d), 4.39(2H,d)
A-75	10.51(1H,brs), 8.94(1H,d), 8.89(1H,s), 7.65(1H,d), 5.05(2H, S), 4.34(2H,s), 1.81(3H,s)
A-79	10.45(1H,brs), 8.96(1H,d), 8.88(1H,s), 8.52(1H,brs), 7.66(1H,d), 5.85(1H,m), 5.67(1H,m), 4.38(2H,d), 1.77(3H,d)
A-81	10.74(1H,brs), 9.37(1H,brs), 8.93(1H,d), 8.89(1H,s), 7.66(1H,d), 4.56(2H,s), 2.60(1H)
A-85	1.33(3H, t), 4.29(2H, q), 4.48(2H, s), 7.64(1H, d), 8.85(1H, s), 8.90(1H, d), 9.60(1H, brs), 11.11(1H, brs)
A-86	4.92(2H, s), 7.3-7.5(5H, m), 7.63(1H, d), 8.8-9.0(2H, m), 9.91(1H, brs), 10.56(1H, brs)
A-88	8.29(1H,d), 8.88(1H,s), 8.86(1H,s), 7.65(1H,d), 7.28(1H,t), 6.93-6.99(3H) 4.93(2H,s), 3.83(3H,s)
A-89	8.88(1H,s), 8.76(1H,d), 8.63(1H,s), 7.55(1H,d), 7.36(2H,d), 6.88(2H,d), 4.99(2H,s), 3.79(3H,s)
A-90	8.97(1H,d), 8.93(1H,s), 8.52(1H,brs), 7.67(1H,d), 7.35(2H,t), 7.11(2H,d), 7.10(1H,t)
A-149	10.32(1H,s), 9.53(1H,s), 8.98-9.01(2H), 7.68(1H,d), 7.44(2H,d), 7.33(2H,t), 7.15(1H,t)

Cpd	¹ H-NMR
A-153	7.0-7.1(1H, m), 7.2-7.3(1H, m), 7.3-7.5(1H, m), 7.68(1H, d), 7.9-8.1(1H, m), 8.9-9.1(2H, m), 9.82(1H, brs), 10.88(1H, brs)
A-154	7.0-7.3(3H, m), 7.51(1H, s), 7.71(1H, d), 8.99(1H, s), 9.03(1H, d), 10.21(1H, brs), 10.46(1H, brs)
A-155	7.2-7.3(2H, m), 7.4-7.5(2H, m), 7.69(1H, d), 8.94(1H, s), 8.97(1H, d), 10.26(1H, brs), 10.42(1H, brs)
A-158	7.3-7.4(2H, m), 7.4-7.5(2H, m), 7.70(1H, d), 8.99(1H, s), 9.02(1H, d), 9.30(1H, brs), 10.33(1H, brs)
A-162	7.2-7.3(1H, m), 7.5-7.6(1H, m), 7.6-7.7(2H, m), 7.93(1H, d), 8.96(1H, d), 8.98(1H, s), 9.68(1H, brs), 10.72(1H, brs)
A-170	3.82(3H, s), 6.8-6.9(2H, m), 7.3-7.5(2H, m), 7.68(1H, d), 8.9-9.0(2H, m), 9.33(1H, brs), 10.17(1H, brs)
A-180	3.99(3H, s), 7.1-7.2(1H, m), 7.4-7.6(1H, m), 7.66(1H, d), 8.0-8.1(1H, m), 8.2-8.3(1H, m), 8.97(1H, d), 9.00(1H, s), 9.39(1H, brs), 12.32(1H, brs)
A-190	10.42(1H,s), 9.11(1H,s), 9.01(1H,d), 7.86(1H,d), 7.60(1H,s), 7.53(1H,d), 7.31(1H,t), 7.11(1H,d), 4.62(2H)
A-194	7.1-7.3(2H, m), 7.4-7.5(2H, m), 7.69(1H, d), 8.9-9.0(2H, m), 9.65(1H, brs), 10.42(1H, brs)
A-200	6.9-7.1(4H, m), 7.3-7.4(2H, m), 7.4-7.5(2H, m), 7.69(1H, d), 8.9-9.0(2H, m), 9.34(1H, brs), 10.30(1H, brs)
A-203	10.38(1H,s), 9.58(1H,s), 8.98-9.01(2H), 7.71(1H,d), 7.59(2H,d), 7.49(2H,d), 7.00-7.08(4H)
A-204	7.2-7.4(2H, m), 7.70(1H, d), 8.1-8.2(1H, m), 8.79(1H, brs), 8.9-9.1(2H, m), 10.92(1H, brs)
A-205	7.0-7.1(1H, m), 7.3-7.4(1H, m), 7.71(1H, d), 7.9-8.0(1H, m), 8.99(1H, s), 9.03(1H, d), 10.08(1H, brs), 11.05(1H, brs)
A-206	7.2-7.3(2H, m), 7.3-7.4(2H, m), 7.65(1H, d), 8.92(1H, d), 8.95(1H, s), 9.36(1H, brs), 9.92(1H, brs)

Cpd	¹ H-NMR
A-207	7.1-7.2(1H, m), 7.3-7.4(1H, m), 7.6-7.7(1H, m), 7.72(1H, d), 8.99(1H, s), 9.03(1H, d), 10.21(1H, brs), 10.50(1H, brs)
A-208	7.1-7.2(1H, m), 7.4-7.5(2H, m), 7.72(1H, d), 8.97(1H, s), 9.03(1H, d), 9.13(1H, brs), 10.45(1H, brs)
A-209	9.07(1H,s), 8.97(1H,d), 8.27(1H,d), 8.00(1H,brs), 7.81(1H,d), 7.74(1H,t), 7.09(1H,t)
A-210	10.44(1H,s), 9.33(1H,brs), 9.02(1H,d), 8.99(1H,s), 8.71(1H,S), 8.40(1H,d), 7.98(1H,d), 7.71(1H,d), 7.32(1H,dd)
A-211	10.57(1H,s), 9.12(1H,s), 9.02(1H,d), 8.48(2H,d), 7.87(1H,d), 7.63(2H,d)
A-212	12.48(1H,brs), 9.63(1H,brs), 8.88(1H,d), 8.81(1H,s), 8.65(2H,d), 7.61(1H,d), 7.07(1H,t)
A-222	7.01(1H, d), 7.48(1H, d), 7.71(1H, d), 8.98(1H, s), 9.01(1H, d), 9.92(1H, brs)
A-223	7.72(1H, d), 8.33(1H, s), 8.87(1H, s), 8.98(1H, s), 9.01(1H, d), 10.18(1H, brs)
A-248	3.8-4.0(2H, m), 7.67(1H, d), 8.6-8.8(1H, m), 8.91(1H, s), 8.96(1H, s), 9.80(1H, brs)
A-250	1.9-2.1(2H, m), 3.3-3.5(2H, m), 3.5-3.7(2H, m), 7.65(1H, d), 8.43(1H, brs), 8.90(1H, s), 8.93(1H, d), 10.35(1H, brs)
A-251	3.39(3H, s), 3.4-3.6(4H, m), 7.65(1H, d), 8.43(1H, brs), 8.90(1H, s), 8.94(1H, d), 9.02(1H, brs)
A-255	0.92(3H, t), 1.3-1.5(2H, m), 1.5-1.7(2H, m), 1.7-1.9(2H, m), 3.2-3.6(6H, m), 7.63(1H, d), 8.45(1H, brs), 8.89(1H, s), 8.91(1H, d), 10.00(1H, brs)
A-256	3.3-3.6(m, 8H), 4.44(1H, t), 7.65(1H, d), 8.40(1H, brs), 8.90(1H, s), 8.93(1H, s), 9.40(1H, brs)
A-260	3.4-3.5(2H, m), 3.7-3.9(2H, m), 7.67(1H, d), 8.58(1H, brs), 8.91(1H, s), 8.95(1H, d), 9.22(1H, brs)
A-261	10.89(1H,s), 8.89-8.93(2H), 8.55(1h,d), 7.66(1H,d), 3.32-3.64(4H), 1.71-

Cpd	¹ H-NMR
	1.76(2H)
A-262	3.78(3H, s), 3.98(2H, d), 7.64(1H, d), 8.7-8.9(1H, m), 8.89(1H, s), 8.92(1H, d), 10.31(1H, brs)
A-265	4.43 (2H, d), 7.84 (1H, d), 8.81(1H, brs), 9.00(1H, d), 9.08(1H, s)
A-267	8.97(1H,d), 8.93(1H,s), 8.60(1H,s), 7.67(1H,d), 1.74(6H,s)
A-268	1.0-1.2(6H, m), 1.61(3H, s), 2.1-2.3(1H, m), 7.66(1H, d), 8.73(1H, brs), 8.94(1H, s), 8.96(1H, d), 10.05(1H, brs)
A-274	1.5-1.7(4H, m), 2.3-2.6(6H, m), 3.2-3.4(2H, m), 7.62(1H, d), 8.5-8.7(1H, m), 8.8-9.0(2H, m), 10.40(1H, brs)
A-292	1.0-1.9(10H, m), 2.88(3H, s), 3.7-4.0(1H, m), 7.55(1H, d), 8.74(1H, s), 8.82(1H, d)
A-296	2.98(3H, s), 4.52(2H, s), 7.2-7.4(5H, m), 7.57(1H, d), 8.52(1H, brs), 8.74(1H, s), 8.34(1H, d)
A-312	3.11(3H, s), 7.73(1H, d), 8.74(1H, s), 8.87(1H, s), 9.39(1H, s), 9.79(1H, brs)
A-313	3.13(3H, s), 3.79(3H, s), 7.57(1H, d), 8.72(1H, s), 8.85(1H, d), 8.90(1H, brs)
A-316	1.32(6H, d), 3.12(3H, s), 4.1-4.3(1H, m), 7.56(1H, d), 8.70(1H, s), 8.78(1H, brs), 8.84(1H, d)
A-317	3.17(3H, s), 4.40(2H, d), 5.3-5.6(2H, m), 5.9-6.1(1H, m), 7.57(1H, d), 8.68(1H,s), 8.84(1H, d)
A-326	1.50(1H, s), 3.09(3H, s), 3.83(3H, s), 5.54(1H, q), 7.58(1H, d), 8.78(1H, s), 8.85(1H, d)
A-329	3.13(3H, s), 4.88(2H, s), 7.3-7.5(5H, m), 7.53(1H, d), 8.43(1H, s), 8.59(1H, brs), 8.82(1H, d)
A-331	3.17(3H, s), 7.81(1H, d), 8.96(1H, d), 9.13(1H, s), 10.22(1H, brs)
A-349	8.84(1H,d), 8.69(1H,s), 7.69(1H,brs), 7.50-7.59(4H), 7.29(2H,d),

Cpd	¹ H-NMR
	3.21(3H,s)
A-353	8.84(1H,d), 8.70(1H,s), 7.55-7.62(2H), 7.24-7.46(3H), 3.16(3H,s)
A-354	8.84(1H,d), 8.70(1H,s), 7.57(1H,d), 7.45-7.48(2H), 7.32(1H), 7.20(1H), 3.21(3H,s)
A-355	8.84(1H,d), 8.69(1H,s), 7.57(1H,s), 7.50(2H,d), 7.24(2H,d), 3.20(3H,s)
A-365	8.84(1H,d), 8.67(1H,s), 7.55-7.58(2H), 7.27-7.39(2H), 7.22(1H,d), 3.13(3H,s), 2.30(3H,s)
A-366	8.82(1H,d), 8.67(1H,s), 7.77(1H,s), 7.56(1H,d), 7.38(1H,t), 7.23(1H,d)7.06-7.10(2H), 3.18(3H,s), 2.41(3H,s)
A-367	8.84(1H,d), 8.68(1H,s), 7.61(1H,s), 7.56(1H,d), 7.30(2H,d), 7.16(2H,d), 3.18(3H,s), 2.42(3H,s)
A-369	8.80(1H,d)8.66(1H,s), 7.91(1H,s), 7.55(1H,d), 7.39(1H,t), 6.93(1H,dd), 6.86(1H,d), 6.79(1H,d), 3.83(3H,s), 3.19(3H,s)
A-373	8.89(1H,d), 8.85(1H,s), 8.29(2H,d), 7.80(1H,d), 7.73(2H,d), 3.41(3H,s)
A-381	8.86(1H,d), 8.73(1H,s), 7.73(1H,d) 7.29(1H,t), 6.83-6.92(3H), 3.19(3H,s)
A-398	13.93(1H,s), 8.84(1H,d), 8.75(1H,s), 8.37(1H,d), 7.83(1H,t), 7.58(1H,d), 7.09-7.16(2H), 3.36(3H,s)
A-431	3.51(2H, t), 3.64(2H, t), 7.59(1H, d), 8.78(1H, s), 8.82(1H, d), 10.38(1H, brs)
A-519	1.11(3H, t), 3.2-3.4(2H, m), 3.4-3.6(2H, m), 3.7-3.9(2H, m), 7.56(1H, d), 8.73(1H, s), 8.80(1H, d)
A-524	0.85(3H, t), 1.4-1.7(2H, m), 3.1-3.3(2H, m), 3.4-3.6(2H, m), 3.7-3.9(2H, m), 4.82(1H, brs), 7.56(1H, d), 8.72(1H, s), 8.78(1H, d), 10.54(1H, brs)
A-529	8.82(1H,d), 8.62(1H,s), 8.73(1H,brs), 7.54(1H,d), 7.25-7.60(5H), 4.40-4.58(3H), 1.16(6H)
A-540	1.16(6H, d), 4.2-4.5(1H, m), 7.63(1H, d), 8.68(1H, s), 8.82(1H, d), 9.02(1H, brs)

Cpd	¹ H-NMR
A-544	8.84(1H,d), 8.69(1H,s), 7.56(1H,d), 4.10-4.25(2H), 1.34(3H,d), 1.21(3H,d)
A-564	8.82(1H,d), 8.67(1H,s), 7.50-7.57(3H), 7.15-7.26(3H), 4.65(1H,m), 1.03(6H,d)
A-605	1.10(6H, d), 3.3-3.5(2H, m), 3.8-4.0(2H, m), 4.3-4.5(1H, m), 7.54(1H, d), 8.79(1H, s), 8.80(1H, d)
A-626	8.88(1H,d), 8.73(1H,s), 7.60(1H,d), 6.41(1H,brs), 1.17(9H,s)
A-691	8.82(1H,d), 8.65(1H,s), 7.53(1H,d), 3.95(2H,t), 3.58(2H,t), 1.36(9H,s)
A-697	8.82(1H,d), 8.75(1H,brs), 8.71(1H,s), 7.56(1H,s), 5.75(2H,m), 5.19- 5.30(4H), 3.29(4H,d)
A-713	8.97(1H,s), 8.84(1H,d), 8.73(1H,s), 7.57(1H,d), 5.79(1H,m), 5.26(1H,d), 5.24(1H,d), 4.11(2H,d), 3.78(3H,s)
A-736	8.83(1H,d), 8.69(1H,s), 7.45-7.58(5H), 7.24-7.28(2H), 5.78(1H,m), 5.12(1H,d), 5.08(1H,d), 4.17(2H,d),
A-737	8.84(1H,d), 8.71(1H,s), 7.55-7.62(2H), 7.27-7.45(3H), 5.80(1H,m), 5.09(1H,d), 5.06(1H,d), 4.49(1H,dd), 3.81(1H,dd)
A-738	8.84(1H,d), 8.70(1H,s), 7.57(1H,d), 7.43-7.45(2H), 7.24-7.28(1H), 7.16(1H,dd), 5.77(1H,m), 5.14(1H,d), 5.10(1H,d), 4.16(2H,d)
A-744	8.81(1H,d), 8.69(1H,s), 7.68(1H,d), 7.34(1H,t), 6.88-6.95(3H), 5.77(1H,m), 5.05(1H,d), 5.02(1H,d), 4.19(2H,d), 3.80(3H,s)
A-745	8.83(1H,d), 8.68(1H,s), 7.56(1H,d), 7.15(2H,d), 6.98(2H,d), 5.76(1H,m), 5.10(1H,d), 5.06(1H,d), 4.12(2H,d), 3.86(3H,s)
A-747	8.85(1H,d), 8.70-8.72(2H), 7.72(1H,d), 7.28(1H,t), 6.82-6.89(3H), 5.82(1H,m), 5.03-5.14(2H), 4.20(2H,d)
A-748	8.80(1H,d), 8.68(1H,s), 7.84(1H,s), 7.59(1H,d), 7.07(2H,d), 6.89(2H,d), 5.77(1H,m), 5.00-5.30(2H), 4.11(2H,d)
A-798	4.61(2H, s), 7.2-7.4(5H, m), 7.54(1H, d), 8.54(1H, s), 8.62(1H, d), 9.18(1H, brs), 10.38(1H, brs)

Cpd	¹ H-NMR
A-799	8.95(1H,s), 8.86(1H,d), 8.73(1H,s), 7.57(1H,d), 7.24-7.36(5H), 4.65(2H,s), 3.68(3H,s)
A-805	8.80(1H,d), 8.45(1H,s), 7.53(1H,d), 7.23-7.41(10H), 4.75(2H,s), 4.64(2H,s)
A-822	8.86(1H,d), 8.71(1H,s), 7.58(2H), 7.42(3H), 7.24(3H), 7.04-7.11(4H), 4.76(2H,s)
A-861	9.30(1H,s), 8.81(1H,d), 8.73(1H,s), 7.55(1H,d), 4.38(1H,m), 3.83(1H,d), 3.03(1H,t), 1.50-1.75(6H), 1.22(3H,d)
A-862	3.3-3.5(2H, m), 3.6-3.8(2H, m), 4.47(2H, s), 7.1-7.4(5H, m), 7.57(1H, d), 8.73(1H, s), 8.79(1H, d)
A-864	8.79(1H,d), 8.72(1H,s), 7.56(1H,d), 4.45(1H,brs), 3.20-3.80(4H), 1.90- 2.10(2H)
A-865	8.84(1H,d), 8.74(1H,s), 8.42(1H,brs), 7.57(1H,d), 5.87(2H,brd), 4.33(2H,s), 4.18(2H,s)
A-866	11.32(1H,brs), 9.18(1H,s), 9.05(1H,d), 7.97(1H,d), 7.96(1H,d), 7.94(1H,d), 7.47(1H,t), 7.33(1H,t)
A-867	8.86(1H,d), 8.78(1H,s), 7.71(1H,d), 7.25-7.45(10H)
A-869	3.6-3.9(4H, m), 7.2-7.6(6H, m), 8.67(1H, d), 8.79(1H, m)
A-871	1.7-2.2(4H, m), 3.2-3.7(4H, m), 7.56(1H, d), 8.73(1H, s), 8.81(1H, d), 9.11(1H, brs)
A-872	1.5-1.8(6H, m), 3.3-3.6(4H, m), 7.56(1H, d), 8.75(1H, s), 8.83(1H, d), 8.93(brs)
A-873	3.4-3.6(4H, m), 3.6-3.9(4H, m), 7.58(1H, d), 8.03(1H, brs), 8.76(1H, s), 8.86(1H, d)
A-874	2.6-2.8(4H, m), 4.7-4.9(4H, m), 7.59(1H, d), 8.77(1H, s), 8.86(1H, d)
B-37	4.85(2H, d), 7.2-7.5(5H, m), 7.62(1H, d), 8.85(1H, s), 8.92(1H, d), 9.74(1H, brs), 10.61(1H, brs)

Cpd	¹ H-NMR
B-40	10.83(1H,s), 8.95(1H,d), 8.91(1H,s), 8.78(1H,s), 7.65(1H,d), 7.25-7.67(5H), 1.91(6H)
B-47	10.58(1H), 9.14(1H,s), 8.97(1H,d), 8.90(1H,s), 7.67(1H,d), 7.24-7.38(4H), 4.86(2H,d)
B-64	3.84(3H, s), 7.79(1H, s), 8.84(1H, s), 8.93(1H, d), 10.78(1H, brs)
B-65	12.41(1H,s), 10.66(1H,s), 8.93(1H,s), 8.87(1H,d), 7.70(1H,d), 4.07(2H,q), 1.16(3H,t)
B-71	12.14(1H,s), 9.22(1H,s), 8.98(1H,d), 8.92(1H,s), 7.68(1H,d), 1.43(9H,s)
B-74	12.53(1H,s), 10.79(1H,s), 9.00(1H,s), 8.95(1H,d), 7.79(1H,d), 6.02(1H,m), 5.38(1H,d), 5.28(1H,d), 4.60(2H,d)
B-86	12.22(1H,s), 9.22(1H,brs), 8.95(1H,d), 8.86(1H,s), 7.66(1H,d), 7.37-7.44(5H), 5.14(2H,s)
B-100	2.84(1H, brs), 3.36(1H, brs), 7.87(1H, d), 8.28(1H, brs), 9.03(1H, d), 9.17(1H, s)
B-108	5.40(2H, s), 7.2-7.5(5H, m), 7.71(1H, d), 8.9-9.1(2H, m), 12.80(1H, brs)
B-109	6.8-7.1(4H, m), 7.3-7.4(1H, m), 7.65(1H, d), 8.90(1H, s), 8.96(1H, d), 8.49(1H, brs), 11.82(1H, d)
B-149	12.34(1H,s), 10.95(1H,brs), 9.14(1H,s), 9.02(1H,d), 7.86(1H,d), 7.81(2H,d), 7.44(2H,t), 7.29(1H,m)
B-150	12.35(1H,s), 11.15(1H,brs), 9.16(1H,s), 9.03(1H,d), 8.34(1H,t), 7.87(1H,d), 7.25-7.35(3H)
B-151	12.45(1H,s), 9.14(1H,s), 9.02(1H,d), 7.49(1H), 7.47(1H,d), 7.46-7.50(2H), 7.07(1H,m)
B-152	12.25(1H,s), 11.03(1H,brs), 9.12(1H,s), 9.02(1H,d), 7.86(1H,d), 7.78(2H,t), 7.21(2H,t)
B-155	9.09(1H,s), 8.98(1H,d), 7.83(1H,d), 7.78(2H,d), 7.44(2H,d)
B-158	9.13(1H,s), 9.02(1H,d), 7.87(1H,d), 7.79(2H,d), 7.62(2H,d)

Cpd	¹ H-NMR
B-163	7.5-7.6(2H, m), 7.67(1H, d), 7.8-7.9(1H, m), 8.01(1H, d), 8.91(1H, s), 8.95(1H, s), 9.82(1H, brs), 12.25(1H, brs)
B-166	9.00(1H,s), 8.90(1H,d), 7.74(1H,d), 7.52(1H,d), 7.45(1H,s), 7.19(1H,t), 6.99(1H,d), 2.25(3H,s)
B-167	12.29(1H,s), 10.94(1H,brs), 9.13(1H,s), 9.01(1H,d), 7.86(1H,d), 7.66(2H,d), 7.25(2H,d), 2.34(3H,s)
B-168	3.97(3H, s), 6.9-7.3(3H, m), 7.88(1H, d), 8.8-8.9(1H, m), 9.03(1H, d), 9.15(1H, s), 10.95(1H, brs), 12.73(1H, brs)
B-169	3.83(3H, s), 6.8-6.9(1H, m), 7.2-7.4(2H, m), 7.6-7.7(1H, m), 7.86(1H, d), 9.01(1H, d), 9.13(1H, s), 10.97(1H, brs), 12.38(1H, brs)
B-170	3.79(3H, s), 6.95(2H, d), 7.63(2H, d), 7.83(1H, d), 8.98(1H, d), 9.08(1H, s), 10.93(1H, brs), 12.17(1H, brs)
B-176	9.14(1H,s), 9.03(1H,d), 8.12(2H,d), 7.88(1H,d), 7.85(2H,d)
B-184	12.35(1H,s), 10.96(1H,brs), 9.13(1H,s), 9.02(1H,d), 8.58(1H,s), 7.86(1H,d), 7.53(1H,s), 7.25(1H,t), 7.15(1H,t), 6.76(1H,d)
B-185	12.14(1H,s), 10.92(1H,brs), 9.12(1H,s), 9.20(1H,d), 8.54(1H,brs), 7.85(1H,d), 7.56(2H,d), 6.89(2H,d)
B-189	4.71(2H, s), 7.2-7.4(2H, m), 7.5-7.6(1H, m), 7.8-7.9(2H, m), 9.01(1H, d), 9.11(1H, s), 11.01(1H, brs), 12.13(1H, brs)
B-190	12.38(1H,s), 10.98(1H), 9.15(1H,s), 9.03(1H,d), 7.87(1H,d), 7.74(1H,d), 7.73(1H,s), 7.41(1H,t), 7.30(1H,d), 4.69(3H,s)
B-194	12.37(1H,brs), 9.13(1H,s), 9.03(1H,d), 7.92(2H,d), 7.87(1H,d), 7.42(2H,d)
B-209	9.99(1H,s), 9.18(1H,s), 9.04(1H,d), 8.48-8.55(3H), 7.88(1H,d)
B-247	7.5-8.0(6H, m), 8.99(1H, d), 9.01(1H, s), 10.64(1H, brs)
B-251	3.42(3H, s), 3.65(2H, t), 3.8-4.0(2H, m), 7.66(1H, d), 8.89(1H, s), 8.96(1H, d), 9.22(1H, brs), 10.48(1H, brs)
B-255	0.91(3H, t), 1.3-1.5(2H, m), 1.5-1.7(2H, m), 1.9-2.1(2H, m), 3.46(3H, t),

Cpd	¹ H-NMR
	3.56(3H, t), 3.81(2H, q), 7.66(1H, d), 8.89(1H, s), 8.97(1H, d), 9.02(1H, brs), 10.53(1H, brs)
B-257	1.99(3H, s), 7.88(1H, d), 8.97(1H, d), 8.99(1H, s), 10.92(1H, brs), 12.92(1H, brs)
B-258	7.5-7.7(3H, m), 7.86(1H, s), 7.9-8.1(2H, m), 9.02(1H, d), 9.14(1H, brs)
B-259	7.3-7.5(5H, m), 7.5-7.7(5H, m), 7.77(1H, d), 8.8-9.0(2H, m), 13.05(1H, brs)
B-261	1.8-2.0(2H, m), 3.76(2H, t), 3.8-3.9(2H, m), 7.66(1H, m), 8.99(1H, s), 8.95(1H, d), 9.44(1H, brs), 10.53(1H, brs)
B-267	9.08(1H,s), 9.01(1H,d), 7.84(1H,d), 1.95(6H,s)
B-269	10.38(1H,brs), 9.35(1H,s), 8.96(1H,d), 8.90(1H,s), 7.67(1H,d), 3.73(4H), 1.60-1.80(4H)
B-296	3.23(3H, s), 5.22(2H, s), 7.22-7.5(5H, m), 7.63(1H, d), 8.7-9.0(2H, m)
B-313	9.40(1H,s), 8.95(1H,d), 8.75(1H,s), 7.57(1H,d), 3.86(3H,s), 3.58(3H,s)
B-331	3.37(3H, s), 4.70(1H, s), 7.53(1H, d), 8.62(1H, s), 8.80(1H, d)
B-349	3.69(1H, s), 7.3-7.6(6H, m), 8.33(1H, brs), 8.51(1H, s), 8.79(1H, d)
B-353	8.81(1H,d), 8.52(1H,s), 8.52(1H,s), 7.53-7.60(2H), 7.25-7.46(3H), 3.62(3H,s)
B-354	10.13(1H), 8.88(1H,d), 8.48(1H,s), 7.72(1H,d), 7.37-7.55(4H), 3.75(3H,s)
B-355	8.84(1H,d), 8.57(1H,s), 8.15(1H,s), 7.56(1H,d), 7.43(2H,d), 7.27(2H,d), 3.68(3H,s)
B-366	8.81(1H,d), 8.58(1H,s), 8.14(1H,s), 7.54(1H,d), 7.37(1H,d), 7.25(1H), 7.10(2H), 3.65(3H,s), 2.42(3H,s)
B-369	8.47(1H,d), 8.03(1H,s), 7.33(1H,d), 7.02(1H,t), 6.54-6.64(3H), 3.45(3H,s), 3.32(3H,s)
B-373	8.87(1H,d), 8.62(1H,s), 8.35(1H,s), 8.31(2H,d), 7.57(1H,d), 7.53(2H,d), 3.78(3H,s)

Cpd	¹ H-NMR
B-398	8.89(1H,d), 8.72(1H,s), 8.51(1H,d), 7.98(1H,dd), 7.73(1H,d), 7.58(1H,d), 7.31(1H,dd), 3.79(3H,s)
B-417	9.15(1H,s), 8.88(1H,d), 7.69(1H,d), 4.16(3H,s), 3.56(3H,s)
B-431	3.38(3H, s), 3.7-4.2(4H, m), 7.5-7.7(1H, m), 8.7-9.0(2H, m), 10.35(1H, brs)
B-519	1.2-1.4(3H, m), 3.7-4.1(6H, m), 7.56(1H, d), 8.6-9.0(2H, m), 10.85(1H, brs)
B-564	9.08(1H,brs), 8.36(1H,d), 7.51(1H,brs), 7.23(1H,d), 7.04-7.30(3H), 6.86-6.91(2H), 5.17(1H), 0.74(6H,d)
B-713	9.45(1H,s), 8.85(1H,d), 8.76(1H,s), 7.56(1H,d), 5.90(1H,m), 5.27-5.36(2H), 4.70(2H,d), 3.86(3H,s)
B-736	8.85(1H,s), 8.27(1H,s), 7.69(1H,d), 7.30-7.50(5H), 6.10(1H,m), 5.28(1H,d), 5.17(1H,d), 4.89(2H,d)
B-737	8.83(1H,d), 8.12(1H,s), 7.69(1H,d), 7.54-7.65(2H), 7.38-7.45(2H), 6.05(1H,m), 5.24(1H,d), 5.21(1H,d), 5.00(1H,dd), 4.73(1H,dd)
B-738	10.15(1H), 8.86(1H,d), 8.40(1H,s), 7.71(1H,d), 7.35-7.54(4H), 6.00(1H,m), 5.27(1H,d), 5.22(1H,d), 4.93(1H,d)
B-744	8.80(1H,d), 8.59(1H,s), 8.11(1H,s), 7.53(1H,d), 7.41(1H,t), 6.96(1H,dd), 6.84(1H,dd), 6.77(1H), 5.94(1H,m), 5.20(1H,d), 5.17(1H,d), 4.73(2H,d), 3.84(3H,s)
B-745	8.80(1H,d), 8.67(1H,s), 8.13(1H,s), 7.53(1H,d), 7.17(2H,d), 6.98(2H,d), 5.93(1H,m), 5.17(1H,d), 5.14(1H,d), 4.72(2H,d), 3.85(3H,s)
B-747	8.79(1H,d), 8.51(1H,s), 8.34(1H,s), 7.56(1H,d), 7.33(1H,t), 7.26(1H,s), 6.87(1H,dd), 6.79(1H,dd), 6.74(1H,s), 5.91(1H,m), 5.21(1H,d), 5.17(1H,d), 4.73(2H,d)
B-748	9.69(1H,s), 8.80(1H,d), 7.96(1H,s), 7.66(1H,d), 7.19(2H,d), 6.86(2H,d), 5.93(1H,m), 5.12-5.25(2H), 4.89(2H,d)
B-799	10.45(1H,brs), 8.90(1H,d), 8.86(1H,s), 7.76(1H,d), 7.30-7.46(5H),

Cpd	¹ H-NMR
	5.41(2H,s), 3.88(3H,s)
B-805	8.80(1H,d), 8.69(1H,s), 8.45(1H,s), 7.53(1H,d), 7.23-7.41(10H), 4.75(2H,s), 4.64(2H,s)
B-822	9.90(1H), 8.84(1H,d), 8.25(1H,s), 7.70(1H,d), 7.24-7.45(10H), 5.62(2H,s)
B-861	9.96(1H,brs), 8.95(1H,s), 8.93(1H,d), 7.79(1H,d), 5.40(1H,brs), 4.23(1H,brs), 3.34(1H) 1.60-1.94(6H), 1.33(3H,d)
B-863	8.86-8.95(2H), 7.65(1H,d), 5.62(1H), 3.85-4.35(4H), 2.35-2.65(2H)
B-864	8.93-8.98(2H), 7.79(1H,d), 4.75(1H), 3.70-4.00(4H), 1.95-2.25(2H)
B-865	8.93(2H), 8.42(1H,brs), 7.64(1H,d), 5.9(2H,m), 4.64(2H,s), 4.57(2H,s)
B-867	8.81(1H,d), 8.54(1H,s), 8.49(1H,s), 7.54(1H,d), 7.28-7.45(10H)
B-868	10.10(1H,s), 8.90(1H,d), 8.82(1H,s), 7.76(1H,d), 7.30-7.53(5H), 2.04(3H,s)
B-870	10.38(1H,), 9.37(1H,s), 8.96(1H,d), 8.89(1H,s), 7.67(1H,d), 4.30(2H), 3.74(2H), 3.04(3H,s), 1.85-1.90(4H)
B-871	1.9-2.2(4H, m), 3.7-4.0(4H, m), 7.62(1H, d), 8.8-9.0(2H, m)
B-872	1.6-1.9(6H, m), 3.6-3.8(2H, m), 4.0-4.3(2H, m), 7.63(2h, d), 8.87(1H, brs), 8.9-9.0(2H, m)
B-873	3.5-4.5(6H, m), 7.64(1H, d), 8.56(1H, brs), 8.92(1H, s), 8.94(1H, d)
B-874	8.94(1H,d), 8.93(1H,s), 7.65(1H,d), 4.40(2H,brs), 4.02(2H,brs), 2.86(4H)
B-877	3.07(2H, dt), 3.96(2H, t), 7.06(1H, s), 7.74(1H, d), 8.73(1H, s), 8.87(1H, d)
B-880	1.87(6H, d), 7.2-7.8(6H, m), 8.77(1H, s), 8.83(1H, d)
C-10	3.08(3H, s), 4.57(2H, s), 7.2-7.5(5H, m), 7.64(1H, d), 8.72(1H, s), 8.89(1H, d), 9.34(1H, brs)
C-78	3.10(3H, s), 3.26(3H, d), 4.5-4.8(2H, m), 7.1-7.5(5H, m), 7.64(1H, d), 8.72(1H, s), 8.90(1H, d), 9.34(1H, brs)

Cpd	¹ H-NMR
C-85	3.02(3H, s), 3.34(3H, s), 3.64(3H, s), 7.58(1H, d), 8.65(1H, d), 8.81(1H, d)
C-91	2.88(3H,s), 2.98(3H,s), 4.72(2H,s), 7.30-7.43(5H), 7.59(1H,d), 8.52(1H,s), 8.80(1H,d)
D-85	1.33(1H,t), 2.98(3H,s), 3.61(3H,s), 3.87(1H,q), 7.60(1H,d), 8.67(1H,s), 8.82(1H,d)
D-86	1.2-1.4(6H, m), 3.7-4.0(4H, m), 7.59(1H, d), 8.67(1H, d), 8.81(1H, d)
E-85	2.97(3H,s), 3.59(3H,s), 4.42(2H,d), 5.28(1H,d), 5.32(1H,d), 5.98(1H,m), 7.61(1H,d), 8.68(1H,s), 8.83(1H,d)
E-87	3.00(3H, s), 4.25(2H, d), 4.37(2H, d), 5.2-5.5(4H, m), 5.7-6.1(2H, m), 7.61(1H, d), 8.68(1H, s), 8.82(1H, d)
F-85	2.35(1H,t), 3.09(3H,s), 3.68(3H,s), 4.64(2H,d), 7.62(1H,d), 8.68(1H,s), 8.85(1H,d)
F-88	2.37(1H, dd), 2.62(1H, dd), 3.12(3H, s), 4.50(2H, d), 4.61(2H, d), 7.63(1H, d), 8.73(1H, s), 8.86(1H, d)
G-35	4.66(2H,s), 4.75(2H,s), 7.24-7.42(10H), 7.43(1H,d), 8.46(1H,s), 8.83(1H,d)
G-85	2.81(3H,s), 3.08(3H,s), 5.06(2H,s), 7.26-7.32(3H), 7.45(2H,d), 7.59(1H,d), 8.70(1H,s), 8.82(1H,d)
G-91	2.71(3H, s), 4.29(2H, s), 4.71(2H, s), 7.0-7.1(2H, m), 7.2-7.6(8H, m), 7.58(1H, d), 8.56(1H, s), 8.80(1H, d)
G-126	4.31(2H,s), 4.38(2H,s), 4.71(2H,s), 6.89(2H, d), 7.07(2H), 7.17-7.39(11H), 7.50(1H,d), 8.39(1H,s), 8.58(1H,d)
H-85	2.96(3H,s), 3.64(3H,s), 3.81(3H,s), 4.59(2H,s), 7.62(1H,d), 8.80(1H,s), 8.85(1H,d)
H-89	3.08(3H, S), 3.74(3H, s), 3.77(3H, s), 4.48(2H, s), 4.60(2H, s), 7.64(1H, s), 8.84(1H, s), 8.87(1H, d)

Cpd	¹ H-NMR
H-91	2.90(3H,s), 3.69(3H,s), 4.76(2H,s), 7.24-7.45(5H), 7.64(1H,d), 8.80(1H,s), 8.85(1H,d)
I-85	1.60(3H,d), 3.63(3H,s), 3.80(3H,s), 5.30(1H,q), 7.58(1H,d), 8.78(1H,s), 8.84(1H,d)
S-2	0.87(3H, t), 1.4-1.7(2H, m), 3.17(2H, t), 3.54(2H, t), 4.06(2H, t), 7.54(1H, d), 8.65(1H, s), 8.81(1H, d)
S-3	1.15(6H, d), 3.49(2H, t), 3.9-4.2(3H, m), 7.54(1H, d), 8.66(1H, s), 8.81(1H, d)
S-7	1.34(9H,s), 3.58(2H, t), 3.96(2H, t), 7.53(1h, d), 8.65(1h, s), 8.81(1h, d)
S-15	3.40(2H, t), 4.01(2H, t), 4.53(2H, s), 7.1-7.4(5H, m), 7.57(1h, d), 8.69(1H, s), 8.83(1H, d)
S-18	4.00(2H, t), 4.18(2H, t), 7.1-7.5(5H, m), 7.57(1H, d), 8.70(1H, s), 8.83(1H, d)
S-109	1.25(3H, q), 3.1-3.3(1H, d), 3.4-3.6(1H,m), 3.7-4.0(2H, m), 4.28(1H, d), 4.47(1H, d), 5.76(1H, d), 7.1-7.5(5H, m), 7.57(1H, d), 8.70(1H, s), 8.83(1H, d)
S-120	1.37(6H, d), 4.2-4.4(1H, m), 4.42(2H, s), 7.62(1H, d), 8.73(1H, s), 8.91(1H, d)
S-124	1.55(9H, s), 4.34(2H, s), 7.60(1H, d), 8.71(1H, s), 8.90(1H, d)
S-132	4.47(2H, s), 4.62(2H, s), 7.2-7.4(4H, m), 7.61(1H, d), 8.70(1H, s), 8.91(1H, d)
S-143	1.36(6H, d), 1.70(3H, d), 4.3-4.4(1H, m), 4.67(1H, q), 7.60(1H, d), 8.71(1H, s), 8.90(1H, d)
S-155	1.71(3H, d), 4.76(2H, s), 4.76(1H, q), 7.1-7.4(5H, m), 7.61(1H, d), 8.69(1H, s), 8.91(1H, d)
S-167	1.35(6H, d), 1.78(6H, s), 4.2-4.4(1H, m), 7.58(1H, d), 8.67(1H, s), 8.88(1h, d)
S-356	3.77(2H, t), 4.40(2H, t), 6.81(1H, brs), 7.54(1H, d), 8.65(1H, s), 8.82(1H,

Cpd	¹ H-NMR
	d)
S-357	0.94(3H,t), 1.34(1h,m), 1.60(1H,m), 3.63(2H,t), 3.76(2H,t), 4.23(2H,t), 7.51(1H,d), 8.62(1H,s), 8.79(1H,d)
S-548	3.69(2H,t), 3.77(3h,s), 4.00(2H,t), 7.57(1H,d), 8.67(1H,s), 8.86(1H,d)
S-549	3.43(2H,t), 3.88(2H,t), 4.90(2H,s), 7.30-7.40(5H), 7.57(1H,d), 8.67(1H,s), 8.85(1H,d)
S-550	1.40(3H,d), 4.09(1H,m), 4.34(1H,m), 4.64(1H,m), 7.55(1H,,d), 8.78(1H,d), 9.14(1H,s), 9.47(1H,brs)
S-551	1.03(3H,t), 1.76(2H,m), 4.19(2H,m), 4.63(1H,m), 7.56(1H,d), 8.80(1H,d), 9.17(1H,s), 9.49(1H,brs)
S-552	0.88(3H,t), 1.80(2H,m), 3.82(1H,m), 4.17(1H,d), 4.30(1H,dd), 4.63(1H,t), 5.12(1H,d), 7.23-7.38(5H), 7.53(1H,d), 8.75(1H,d), 9.10(1H,s)
S-553	4.38(1H,dd), 4.90(1H,t), 5.27((1H), 7.25-7.53(5H), 7.57(1H,d), 8.81(1H,d), 9.22(1H,s), 9.70(1H,brs)
S-554	2.67(3H,s), 3.90(1H,dd), 4.45(1H,dd), 4.65(1h,dd), 7.30(2H), 7.40-7.450(3H), 7.60(1H,d), 8.73(1H,s), 8.87(1H,d)
S-555	3.73(1H,d), 4.47(1H,t), 4.66(1H,t), 4.89(1H,t), 5.17(1H,d), 7.10-7.46(10H), 7.57(1H,d), 8.79(1H,d), 9.18(1H,s)
S-556	1.56(3H,d), 3.51(1H,dd), 4.02(1h,t), 4.95(1H,m), 7.54(1H,d), 8.78(1H,d), 9.15(1H,s), 9.32(1H,s)
S-557	3.90(1H,t), 4.32(1H,t), 5.80(1H,t), 7.38-7.46(5H), 7.57(1H,d), 8.81(1H,d), 9.21(1H,s), 9.42(1H,brs)
S-558	3.08(3H,s), 3.60(1H,dd), 4.06(1H,t), 5.78(1H,dd), 7.28-7.40(5H), 7.52(1H,d), 8.74(1H,d), 9.09(1H,s)
S-559	3.44(1H,dd), 3.89(1H,t), 4.60(1H,d), 4.73(1H,d), 5.76(1H,dd), 7.26-7.40(10H), 7.53(1H,d), 8.76(1H,d), 9.13(1H,s)
U-3	8.80(1H,d), 8.66(1h,s), 7.54(1H,d), 4.29(2H,t), 4.05(2H,t), 1.18(6H,d)

Cpd	¹ H-NMR
U-7	8.78(1H,d), 8.66(1H,s), 7.52(1H,d), 4.28(2H,t), 4.00(2H,t), 1.34(9H,s)
U-20	8.81(1H,d), 8.67(1H,s), 7.55(1H,d), 7.25-7.50(5H), 4.66(2H,s), 4.00-4.17(4H)
W-194	1.45(18H, s), 7.54(1H, d), 7.75(1H, d), 9.08(1H, s), 10.17(1H, brs)
X-35	3.24(3H, d), 7.67(1H, d), 8.89(1H, s), 8.97(1H, d), 9.24(1H, brs), 10.32(1H, brs)
X-43	4.90(2H, d), 7.2-7.5(5H, m), 7.68(1H, d), 8.92(1H, s), 8.98(1H, d), 9.51(1H, brs), 10.62(1H, brs)
X-45	9.00(1H,s), 8.97(1H,d), 7.82(1H,d), 5.04(2H,q)
X-55	3.77(2H, t), 4.55(2H, t), 7.64(1H, d), 8.84(1H, s), 8.92(1H, d), 9.27(1H, brs)

According to a further feature of the present invention there is provided a method for the control of pests at a locus which comprises the application of an effective amount of a compound of formula (I) or a salt thereof. For this purpose, the said compound is normally used in the form of a pesticidal composition (i.e. in association with compatible diluents or carriers and/or surface active agents suitable for use in pesticidal compositions), for example as hereinafter described.

The term "compound of the invention" as used hereinafter embraces a 3-pyridylcarboxamide of formula (I) as defined above and a pesticidally acceptable salt thereof.

One aspect of the present invention as defined above is a method for the control of pests at a locus. The locus includes, for example, the pest itself, the place (plant, field, forest, orchard, waterway, soil, plant product, or the like) where the pest resides or feeds, or a place susceptible to future infestation by the pest. The compound of the invention may therefore be applied directly to the pest, to the place where the pest resides or feeds, or to the place susceptible to future infestation by the pest.

As is evident from the foregoing pesticidal uses, the present invention provides pesticidally active compounds and methods of use of said compounds for the control of a number of pest species which includes: arthropods, especially insects or mites, or plant nematodes. The compound of the invention may thus be advantageously

5 employed in practical uses, for example, in agricultural or horticultural crops, in forestry, in veterinary medicine or livestock husbandry, or in public health.

The compounds of the invention may be used for example in the following applications and on the following pests:

For the control of soil insects, such as corn rootworm, termites (especially for
10 protection of structures), root maggots, wireworms, root weevils, stalkborers, cutworms, root aphids, or grubs. They may also be used to provide activity against plant pathogenic nematodes, such as root-knot, cyst, dagger, lesion, or stem or bulb nematodes, or against mites. For the control of soil pests, for example corn rootworm, the compounds are advantageously applied to or incorporated at an
15 effective rate into the soil in which crops are planted or to be planted or to the seeds or growing plant roots.

In the area of public health, the compounds are especially useful in the control of many insects, especially filth flies or other Dipteran pests, such as houseflies, stableflies, soldierflies, hornflies, deerflies, horseflies, midges, punkies, blackflies, or
20 mosquitoes.

In the protection of stored products, for example cereals, including grain or flour, groundnuts, animal feedstuffs, timber or household goods, e.g. carpets and textiles, compounds of the invention are useful against attack by arthropods, more especially beetles, including weevils, moths or mites, for example *Ephestia* spp. (flour moths),
25 *Anthrenus* spp. (carpet beetles), *Tribolium* spp. (flour beetles), *Sitophilus* spp. (grain weevils) or *Acarus* spp. (mites).

In the control of cockroaches, ants or termites or similar arthropod pests in infested domestic or industrial premises or in the control of mosquito larvae in waterways, wells, reservoirs or other running or standing water.

30 For the treatment of foundations, structures or soil in the prevention of the attack on building by termites, for example, *Reticulitermes* spp., *Heterotermes* spp., *Coptotermes* spp..

- In agriculture against adults, larvae and eggs of Lepidoptera (butterflies and moths), e.g. *Heliothis* spp. such as *Heliothis virescens* (tobacco budworm), *Heliothis armigera* and *Heliothis zea*. Against adults and larvae of Coleoptera (beetles) e.g. *Anthonomus* spp. e.g. *grandis* (cotton boll weevil), *Leptinotarsa decemlineata*
- 5 (Colorado potato beetle), *Diabrotica* spp. (corn rootworms). Against Heteroptera (Hemiptera and Homoptera) e.g. *Psylla* spp., *Bemisia* spp., *Trialeurodes* spp., *Aphis* spp., *Myzus* spp., *Megoura viciae*, *Phylloxera* spp., *Nephotettix* spp. (rice leaf hoppers), *Nilaparvata* spp..
- Against Diptera e.g. *Musca* spp.. Against Thysanoptera such as *Thrips tabaci*.
- 10 Against Orthoptera such as *Locusta* and *Schistocerca* spp., (locusts and crickets) e.g. *Gryllus* spp., and *Acheta* spp. for example, *Blatta orientalis*, *Periplaneta americana*, *Blatella germanica*, *Locusta migratoria migratorioides*, and *Schistocerca gregaria*. Against Collembola e.g. *Periplaneta* spp. and *Blatella* spp. (roaches).
- Against arthropods of agricultural significance such as Acari (mites) e.g. *Acarus siro*,
- 15 *Argas* spp., *Omithodoros* spp., *Dermanyssus gallinae*, *Eriophyes ribis*, *Phyllocoptruta oleivora*, *Boophilus* spp., *Rhipicephalus* spp., *Amblyomma* spp., *Hyalomma* spp., *Ixodes* spp., *Psoroptes* spp., *Chorioptes* spp., *Sarcoptes* spp., *Tarsonemus* spp., *Bryobia praetiosa*, *Panonychus* spp., *Tetranychus* spp., *Eotetranychus* spp., *Oligonychus* spp., *Eutetranychus* spp.
- 20 From the order of the Isopoda, for example, *Oniscus aselus*, *Armadium vulgare*, *Porcellio scaber*.
- Against nematodes which attack plants or trees of importance to agriculture, forestry or horticulture either directly or by spreading bacterial, viral, mycoplasma or fungal diseases of the plants. The plant-parasitic nematodes which can be controlled in
- 25 accordance with the invention include, for example, the root-parasitic soil-dwelling nematodes such as, for example, those of the genera *Meloidogyne* (root knot nematodes, such as *Meloidogyne incognita*, *Meloidogyne hapla* and *Meloidogyne javanica*), *Heterodera* and *Globodera* (cyst-forming nematodes, such as *Globodera rostochiensis*, *Globodera pallida*, *Heterodera trifolii*) and of the genera *Radopholus*,
- 30 such as *Radopholus similis*, *Pratylenchus* such as *Pratylenchus neglectus*, *Pratylenchus penetrans* and *Pratylenchus curvatus*;

Tylenchulus such as *Tylenchulus semipenetrans*, *Tylenchorhynchus*, such as *Tylenchorhynchus dubius* and *Tylenchorhynchus claytoni*, *Rotylenchus* such as *Rotylenchus robustus*, *Heliocotylenchus* such as *Haliocotylenchus multicinctus*, *Belonoaimus* such as *Belonoaimus longicaudatus*, *Longidorus* such as *Longidorus*
 5 *elongatus*, *Trichodorus* such as *Trichodorus primitivus* and *Xiphinema* such as *Xiphinema index*.

Other nematode genera which can be controlled using the compounds according to the invention are *Ditylenchus* (stem parasites, such as *Ditylenchus dipsaci* and
 10 *Ditylenchus destructor*), *Aphelenchoides* (foliar nematodes, such as *Aphelenchoides ritzemabosi*) and *Anguina* (seed nematodes, such as *Anguina tritici*).

In the field of veterinary medicine or livestock husbandry or in the maintenance of public health against arthropods which are parasitic internally or externally upon vertebrates, particularly warm-blooded vertebrates, for example domestic animals,
 15 e.g. cattle, sheep, goats, equines, swine, poultry, dogs or cats, for example *Acarina*, including ticks (e.g. *Ixodes* spp., *Boophilus* spp. e.g. *Boophilus microplus*, *Rhipicephalus* spp. e.g. *Rhipicephalus appendiculatus* *Ornithodoros* spp. (e.g. *Ornithodoros moubata*) and mites (e.g. *Damalinia* spp.); fleas; *Diptera* (e.g. *Aedes* spp., *Anopheles* spp., *Musca* spp., *Hypoderma* spp.); *Hemiptera*; *Dictyoptera* (e.g.
 20 *Periplaneta* spp., *Blatella* spp.); *Hymenoptera*; for example against infections of the gastro-intestinal tract caused by parasitic nematode worms, for example members of the family *Trichostrongylidae*.

From the class of the helminths, for example, *Haemonchus*, *Trichostrongylus*, *Ostertagia*, *Cooperia*, *Chabertia*, *Strongyloides*, *Oesophagostomum*, *Hyostrongylus*,
 25 *Ancylostoma*, *Ascaris* and *Heterakis* and also *Fasciola*.

From the class of the *Gastropoda*, for example, *Deroceras* spp., *Arion* spp., *Lymnaea* spp., *Galba* spp., *Succinea* spp., *Biomphalaria* spp., *Bulinus* spp., *Oncomelania* spp.

30 From the class of the *Bivalva*, for example, *Dreissena* spp.

In practical use for the control of arthropods, especially insects or acarids, or nematode pests of plants, a method, for example, comprises applying to the plants or to the medium in which they grow an effective amount of a compound of the invention. For such a method, the compound of the invention is generally applied to

5 the locus in which the arthropod or nematode infestation is to be controlled at an effective rate in the range of about 2g to about 1kg of the active compound per hectare of locus treated. Under ideal conditions, depending on the pest to be controlled, a lower rate may offer adequate protection. On the other hand, adverse weather conditions, resistance of the pest or other factors may require that the active

10 ingredient be used at higher rates. The optimum rate depends usually upon a number of factors, for example, the type of pest being controlled, the type or the growth stage of the infested plant, the row spacing or also the method of application. Preferably an effective rate range of the active compound is from about 10g/ha to about 400g/ha, more preferably from about 50g/ha to about 200 g/ha.

15 When a pest is soil-borne, the active compound generally in a formulated composition, is distributed evenly over the area to be treated (ie, for example broadcast or band treatment) in any convenient manner and is applied at rates from about 10g/ha to about 400g ai/ha, preferably from about 50g/ha to about 200 g ai/ha. When applied as a root dip to seedlings or drip irrigation to plants the liquid solution

20 or suspension contains from about 0.075 to about 1000 mg ai/l, preferably from about 25 to about 200 mg ai/l. Application may be made, if desired, to the field or crop-growing area generally or in close proximity to the seed or plant to be protected from attack. The compound of the invention can be washed into the soil by spraying with water over the area or can be left to the natural action of rainfall. During or after

25 application, the formulated compound can, if desired, be distributed mechanically in the soil, for example by ploughing, disking, or use of drag chains. Application can be prior to planting, at planting, after planting but before sprouting has taken place, or after sprouting.

The compound of the invention and methods of control of pests therewith are of

30 particular value in the protection of field, forage, plantation, glasshouse, orchard or vineyard crops, of ornamentals, or of plantation or forest trees, for example: cereals (such as wheat or rice), cotton, vegetables (such as peppers), field crops (such as

sugar beets, soybeans or oil seed rape), grassland or forage crops (such as maize or sorghum), orchards or groves (such as of stone or pit fruit or citrus), ornamental plants, flowers or vegetables or shrubs under glass or in gardens or parks, or forest trees (both deciduous and evergreen) in forests, plantations or nurseries.

- 5 They are also valuable in the protection of timber (standing, felled, converted, stored or structural) from attack, for example, by sawflies or beetles or termites.

They have applications in the protection of stored products such as grains, fruits, nuts, spices or tobacco, whether whole, milled or compounded into products, from moth, beetle, mite or grain weevil attack. Also protected are stored animal products
10 such as skins, hair, wool or feathers in natural or converted form (e.g. as carpets or textiles) from moth or beetle attack as well as stored meat, fish or grains from beetle, mite or fly attack.

Additionally, the compound of the invention and methods of use thereof are of particular value in the control of arthropods or helminths which are injurious to, or
15 spread or act as vectors of diseases domestic animals, for example those hereinbefore mentioned, and more especially in the control of ticks, mites, lice, fleas, midges, or biting, nuisance or myiasis flies. The compounds of the invention are particularly useful in controlling arthropods or helminths which are present inside domestic host animals or which feed in or on the skin or suck the blood of the
20 animal, for which purpose they may be administered orally, parenterally, percutaneously or topically.

The compositions hereinafter described for application to growing crops or crop growing loci or as a seed dressing may, in general, alternatively be employed in the protection of stored products, household goods, property or areas of the general
25 environment. Suitable means of applying the compounds of the invention include: to growing crops as foliar sprays (for example as an in-furrow spray), dusts, granules, fogs or foams or also as suspensions of finely divided or encapsulated compositions as soil or root treatments by liquid drenches, dusts, granules, smokes or foams; to seeds of crops via application as seed dressings by liquid slurries or
30 dusts;
to animals infested by or exposed to infestation by arthropods or helminths, by parenteral, oral or topical application of compositions in which the active ingredient

exhibits an immediate and/or prolonged action over a period of time against the arthropods or helminths, for example by incorporation in feed or suitable orally-ingestible pharmaceutical formulations, edible baits, salt licks, dietary supplements, pour-on formulations, sprays, baths, dips, showers, jets, dusts, greases, shampoos, 5 creams, wax smears or livestock self-treatment systems; to the environment in general or to specific locations where pests may lurk, including stored products, timber, household goods, or domestic or industrial premises, as sprays, fogs, dusts, smokes, wax-smears, lacquers, granules or baits, or in tricklefeeds to waterways, wells, reservoirs or other running or standing water.

10

The compounds of the formula (I) can also be employed for controlling harmful organisms in crops of known genetically engineered plants or genetically engineered plants yet to be developed. As a rule, the transgenic plants are distinguished by especially advantageous properties, for example by resistances to particular crop 15 protection agents, resistances to plant diseases or pathogens of plant diseases, such as particular insects or microorganisms such as fungi, bacteria or viruses. Other particular properties concern, for example, the harvested material with regard to quantity, quality, storage properties, composition and specific constituents. Thus, transgenic plants are known where the starch content is increased, or the starch 20 quality is altered, or where the harvested material has a different fatty acid composition.

25

The use in economically important transgenic crops of useful plants and ornamentals is preferred, for example of cereals such as wheat, barley, rye, oats, millet, rice, cassava and maize or else crops of sugar beet, cotton, soya, oilseed rape, potatoes, tomatoes, peas and other types of vegetables.

30

When used in transgenic crops, in particular those which have resistances to insects, effects are frequently observed, in addition to the effects against harmful organisms to be observed in other crops, which are specific for application in the transgenic crop in question, for example an altered or specifically widened spectrum of pests

which can be controlled, or altered application rates which may be employed for application.

The invention therefore also relates to the use of compounds of the formula (I) for
5 controlling harmful organisms in transgenic crop plants.

According to a further feature of the present invention there is provided a pesticidal composition comprising one or more compounds of the invention as defined above, in association with, and preferably homogeneously dispersed in one or more
10 compatible pesticidally acceptable diluents or carriers and/or surface active agents [i.e. diluents or carriers and/or surface active agents of the type generally accepted in the art as being suitable for use in pesticidal compositions and which are compatible with compounds of the invention].

In practice, the compounds of the invention most frequently form parts of
15 compositions. These compositions can be employed to control arthropods, especially insects and acarids, or helminths such as plant nematodes. The compositions may be of any type known in the art suitable for application to the desired pest in any premises or indoor or outdoor area. These compositions contain at least one compound of the invention as the active ingredient in combination or
20 association with one or more other compatible components which are for example, solid or liquid carriers or diluents, adjuvants, surface-active-agents, or the like appropriate for the intended use and which are agronomically or medicinally acceptable. These compositions, which may be prepared by any manner known in the art, likewise form a part of this invention.

25 The compounds of the invention, in their commercially available formulations and in the use forms prepared from these formulations may be present in mixtures with other active substances such as insecticides, attractants, sterilants, acaricides, nematicides, fungicides, growth regulatory substances or herbicides.

30 The pesticides include, for example, phosphoric esters, carbamates, carboxylic esters, formamidines, tin compounds and materials produced by microorganisms.

Preferred components in mixtures are:

1. from the group of the phosphorus compounds
acephate, azamethiphos, azinphos-ethyl, azinphos-methyl, bromophos, bromophos-ethyl, cadusafos (F-67825), chlorethoxyphos, chlorfenvinphos, chlormephos, chlorpyrifos, chlorpyrifos-methyl, demeton, demeton-S-methyl, demeton-S-methyl sulfone, dialifos, diazinon, dichlorvos, dicrotophos, dimethoate, disulfoton, EPN, ethion, ethoprophos, etrimfos, famphur, fenamiphos, fenitrothion, fensulfothion, fenthion, flupyrzofos, fonofos, formothion, fosthiazate, heptenophos, isazophos, isothioate, isoxathion, malathion, methacrifos, methamidophos, methidathion, salithion, mevinphos, monocrotophos, naled, omethoate, oxydemeton-methyl, parathion, parathion-methyl, phenthoate, phorate, phosalone, phosfolan, phosphocarb (BAS-301), phosmet, phosphamidon, phoxim, pirimiphos, pirimiphos-ethyl, pirimiphos-methyl, profenofos, propaphos, proetamphos, prothiofos, pyraclofos, pyridapenthion, quinalphos, sulprofos, temephos, terbufos, tebupirimfos, tetrachlorvinphos, thiometon, triazophos, trichlorphon, vamidothion;
2. from the group of the carbamates
alanycarb (OK-135), aldicarb, 2-sec-butylphenyl methylcarbamate (BPMC), carbaryl, carbofuran, carbosulfan, cloethocarb, benfuracarb, ethiofencarb, furathiocarb, HCN-801, isoprocarb, methomyl, 5-methyl-m-cumenylbutyryl (methyl)carbamate, oxamyl, pirimicarb, propoxur, thiodicarb, thiofanox, 1-methylthio(ethylideneamino)-N-methyl-N-(morpholinothio)carbamate (UC 51717), triazamate;
3. from the group of the carboxylic esters
acrinathrin, allethrin, alphametrin, 5-benzyl-3-furylmethyl (E)- (1R)-cis-2,2-dimethyl-3-(2-oxothiolan-3-ylidenemethyl)cyclopropanecarboxylate, beta-cyfluthrin, alpha-cypermethrin, beta-cypermethrin, bioallethrin, bioallethrin ((S)-cyclopentylisomer), bioresmethrin, bifenthrin, (RS)-1-cyano-1-(6-phenoxy-2-pyridyl)methyl (1RS)-trans-3-(4-tert-butylphenyl)-2,2-dimethylcyclopropanecarboxylate (NCI 85193), cycloprothrin, cyfluthrin, cyhalothrin, cythithrin, cypermethrin, cyphenothrin, deltamethrin, empenthrin, esfenvalerate, fenfluthrin, fenpropathrin, fenvalerate, flucythrinate,

flumethrin, fluvalinate (D isomer), imiprothrin (S-41311), lambda-cyhalothrin, permethrin, phenothrin (@ isomer), prallethrin, pyrethrins (natural products), resmethrin, tefluthrin, tetramethrin, theta-cypermethrin, tralomethrin, transfluthrin, zeta-cypermethrin (F-56701);

5

4. from the group of the amidines
amitraz, chlordimeform;

5. from the group of the tin compounds
10 cyhexatin, fenbutatin oxide;

6. others
abamectin, ABG-9008, acetamiprid, acequinocyl, Anagrapha falcitera, AKD-1022, AKD-3059, ANS-118, azadirachtin, Bacillus thuringiensis, Beauveria bassiana,
15 bensultap, bifenazate, binapacryl, BJL-932, bromopropylate, BTG-504, BTG-505, buprofezin, camphechlor, cartap, chlorobenzilate, chlorfenapyr, chlorfluazuron, 2-(4-chlorophenyl)-4,5-diphenylthiophene (UBI-T 930), chlorfentezine, chlorproxyfen, chromafenozide, clothianidine, 2-naphthylmethyl cyclopropanecarboxylate (Ro12-0470), cyromazin, diaclofen (thiamethoxam), diafenthiuron, DBI-3204, ethyl 2-chloro-N-(3,5-dichloro-4-(1,1,2,3,3,3-hexafluoro-1-propyloxy)phenyl)carbamoyl)-2-carboximidate, DDT, dicofol, diflubenzuron, N-(2,3-dihydro-3-methyl-1,3-thiazol-2-ylidene)-2,4-xylidine, dihydroxymethyldihydroxypyrrolidine, dinobuton, dinocap, diofenolan, emamectin benzoate, endosulfan, ethiprole (sulfethiprole), ethofenprox, etoxazole, fenazaquin, fenoxycarb, fipronil, fluazuron, flumite (flufenzine, SZI-121),
25 2-fluoro-5-(4-(4-ethoxyphenyl)-4-methyl-1-pentyl)diphenyl ether (MTI 800), granulosin and nuclear polyhedrosis viruses, fenpyroximate, fenthion, flucyprym, flubenzimine, flubrocycloheximide, flucycloxuron, flufenoxuron, flufenzine, flufenprox, fluproxyfen, gamma-HCH, halfenozide, halofenprox, hexaflumuron (DE_473), hexythiazox, HOI-9004, hydramethylnon (AC 217300), IKI-220,
30 indoxacarb, ivermectin, L-14165, imidacloprid, indoxacarb (DPX-MP062), kanemite (AKD-2023), lufenuron, M-020, M-020, methoxyfenozide, milbemectin, NC-196, neemgard, nidinoterfuran, nitenpyram, 2-nitromethyl-4,5-dihydro-6H-thiazine (DS

52618), 2-nitromethyl-3,4-dihydrothiazole (SD 35651), 2-nitromethylene-1,2-thiazinan-3-ylcarbamaldehyde (WL 108477), novaluron, pirydaryl, propargite, protrifenbute, pymethroline, pyridaben, pyrimidifen, pyriproxyfen, NC-196, NC-1111, NNI-9768, novaluron (MCW-275), OK-9701, OK-9601, OK-9602, OK-9802, R-195, 5 RH-0345, RH-2485, RYI-210, S-1283, S-1833, SI-8601, silafluofen, silomadine (CG-177), spinosad, spiroticlofen, SU-9118, tebufenozide, tebufenpyrad, teflubenzuron, tetradifon, tetrasul, thiacloprid, thiocyclam, thiamethoxam, tolfenpyrad, triazamate, triethoxyspinosyn A, triflumuron, verbutin, vertalec (mykotal), YI-5301.

- 10 The abovementioned components for combinations are known active substances, many of which are described in Ch.R Worthing, S.B. Walker, The Pesticide Manual, 12th Edition, British Crop Protection Council, Farnham 2000.

The effective use doses of the compounds employed in the invention can vary within 15 wide limits, particularly depending on the nature of the pest to be eliminated or degree of infestation, for example, of crops with these pests. In general, the compositions according to the invention usually contain about 0.05 to about 95% (by weight) of one or more active ingredients according to the invention, about 1 to about 95% of one or more solid or liquid carriers and, optionally, about 0.1 to about 50% of 20 one or more other compatible components, such as surface-active agents or the like. In the present account, the term "carrier" denotes an organic or inorganic ingredient, natural or synthetic, with which the active ingredient is combined to facilitate its application, for example, to the plant, to seeds or to the soil. This carrier is therefore generally inert and it must be acceptable (for example, agronomically acceptable, 25 particularly to the treated plant).

The carrier may be a solid, for example, clays, natural or synthetic silicates, silica, resins, waxes, solid fertilizers (for example ammonium salts), ground natural minerals, such as kaolins, clays, talc, chalk, quartz, attapulgite, montmorillonite, bentonite or diatomaceous earth, or ground synthetic minerals, such as silica, 30 alumina, or silicates especially aluminium or magnesium silicates. As solid carriers for granules the following are suitable: crushed or fractionated natural rocks such as calcite, marble, pumice, sepiolite and dolomite; synthetic granules of inorganic or

organic meals; granules of organic material such as sawdust, coconut shells, corn cobs, corn husks or tobacco stalks; kieselguhr, tricalcium phosphate, powdered cork, or absorbent carbon black; water soluble polymers, resins, waxes; or solid fertilizers. Such solid compositions may, if desired, contain one or more compatible wetting, dispersing, emulsifying or colouring agents which, when solid, may also serve as a diluent.

The carrier may also be liquid, for example: water; alcohols, particularly butanol or glycol, as well as their ethers or esters, particularly methylglycol acetate; ketones, particularly acetone, cyclohexanone, methylethyl ketone, methylisobutylketone, or isophorone; petroleum fractions such as paraffinic or aromatic hydrocarbons, particularly xylenes or alkyl naphthalenes; mineral or vegetable oils; aliphatic chlorinated hydrocarbons, particularly trichloroethane or methylene chloride; aromatic chlorinated hydrocarbons, particularly chlorobenzenes; water-soluble or strongly polar solvents such as dimethylformamide, dimethyl sulphoxide, or N-methylpyrrolidone; liquefied gases; or the like or a mixture thereof.

The surface-active agent may be an emulsifying agent, dispersing agent or wetting agent of the ionic or non-ionic type or a mixture of such surface-active agents. Amongst these are e.g., salts of polyacrylic acids, salts of lignosulphonic acids, salts of phenolsulphonic or naphthalenesulphonic acids, polycondensates of ethylene oxide with fatty alcohols or fatty acids or fatty esters or fatty amines, substituted phenols (particularly alkylphenols or arylphenols), salts of sulphosuccinic acid esters, taurine derivatives (particularly alkyltaurates), phosphoric esters of alcohols or of polycondensates of ethylene oxide with phenols, esters of fatty acids with polyols, or sulphate, sulphonate or phosphate functional derivatives of the above compounds.

The presence of at least one surface-active agent is generally essential when the active ingredient and/or the inert carrier are only slightly water soluble or are not water soluble and the carrier agent of the composition for application is water.

Compositions of the invention may further contain other additives such as adhesives or colorants. Adhesives such as carboxymethylcellulose or natural or synthetic polymers in the form of powders, granules or lattices, such as arabic gum, polyvinyl alcohol or polyvinyl acetate, natural phospholipids, such as cephalins or lecithins, or synthetic phospholipids can be used in the formulations. It is possible to use

colorants such as inorganic pigments, for example: iron oxides, titanium oxides or Prussian Blue; organic dyestuffs, such as alizarin dyestuffs, azo dyestuffs or metal phthalocyanine dyestuffs; or trace nutrients such as salts of iron, manganese, boron, copper, cobalt, molybdenum or zinc.

- 5 For their agricultural application, the compounds of the invention are therefore generally in the form of compositions, which are in various solid or liquid forms. Solid forms of compositions which can be used are dusting powders (with a content of the compound of the invention, ranging up to 80%), wettable powders or granules (including water dispersible granules), particularly those obtained by extrusion,
- 10 compacting, impregnation of a granular carrier, or granulation starting from a powder (the content of the compound of the invention, in these wettable powders or granules being between about 0.5 and about 80%). Solid homogenous or heterogenous compositions containing one or more compounds of the invention, for example granules, pellets, briquettes or capsules, may be used to treat standing or running
- 15 water over a period of time. A similar effect may be achieved using trickle or intermittent feeds of water dispersible concentrates as described herein. Liquid compositions, for example, include aqueous or non-aqueous solutions or suspensions (such as emulsifiable concentrates, emulsions, flowables, dispersions, or solutions) or aerosols. Liquid compositions also include, in particular, emulsifiable
- 20 concentrates, dispersions, emulsions, flowables, aerosols, wettable powders (or powder for spraying), dry flowables or pastes as forms of compositions which are liquid or intended to form liquid compositions when applied, for example as aqueous sprays (including low and ultra-low volume) or as fogs or aerosols. Liquid compositions, for example, in the form of emulsifiable or soluble concentrates
- 25 most frequently comprise about 5 to about 80% by weight of the active ingredient, while the emulsions or solutions which are ready for application contain, in their case, about 0.01 to about 20% of the active ingredient. Besides the solvent, the emulsifiable or soluble concentrates may contain, when required, about 2 to about 50% of suitable additives, such as stabilizers, surface-active agents, penetrating
- 30 agents, corrosion inhibitors, colorants or adhesives. Emulsions of any required concentration, which are particularly suitable for application, for example, to plants, may be obtained from these concentrates by dilution with water. These

compositions are included within the scope of the compositions which may be employed in the present invention. The emulsions may be in the form of water-in-oil or oil-in-water type and they may have a thick consistency.

The liquid compositions of this invention may, in addition to normal agricultural use

5 applications be used for example to treat substrates or sites infested or liable to infestation by arthropods (or other pests controlled by compounds of this invention) including premises, outdoor or indoor storage or processing areas, containers or equipment or standing or running water.

All these aqueous dispersions or emulsions or spraying mixtures can be applied, for
10 example, to crops by any suitable means, chiefly by spraying, at rates which are generally of the order of about 100 to about 1,200 liters of spraying mixture per hectare, but may be higher or lower (eg. low or ultra-low volume) depending upon the need or application technique. The compound or compositions according to the invention are conveniently applied to vegetation and in particular to roots or leaves
15 having pests to be eliminated. Another method of application of the compounds or compositions according to the invention is by chemigation, that is to say, the addition of a formulation containing the active ingredient to irrigation water. This irrigation may be sprinkler irrigation for foliar pesticides or it can be ground irrigation or underground irrigation for soil or for systemic pesticides.

20 The concentrated suspensions, which can be applied by spraying, are prepared so as to produce a stable fluid product which does not settle (fine grinding) and usually contain from about 10 to about 75% by weight of active ingredient, from about 0.5 to about 30% of surface-active agents, from about 0.1 to about 10% of thixotropic agents, from about 0 to about 30% of suitable additives, such as anti-foaming
25 agents, corrosion inhibitors, stabilizers, penetrating agents, adhesives and, as the carrier, water or an organic liquid in which the active ingredient is poorly soluble or insoluble. Some organic solids or inorganic salts may be dissolved in the carrier to help prevent settling or as antifreezes for water.

The wettable powers (or powder for spraying) are usually prepared so that they
30 contain from about 10 to about 80% by weight of active ingredient, from about 20 to about 90% of a solid carrier, from about 0 to about 5% of a wetting agent, from about 3 to about 10% of a dispersing agent and, when necessary, from about 0 to about

80% of one or more stabilizers and/or other additives, such as penetrating agents, adhesives, anti-caking agents, colorants, or the like. To obtain these wettable powders, the active ingredient is thoroughly mixed in a suitable blender with additional substances which may be impregnated on the porous filler and is ground
5 using a mill or other suitable grinder. This produces wettable powders, the wettability and the suspendability of which are advantageous. They may be suspended in water to give any desired concentration and this suspension can be employed very advantageously in particular for application to plant foliage.

The "water dispersible granules (WG)" (granules which are readily dispersible in
10 water) have compositions which are substantially close to that of the wettable powders. They may be prepared by granulation of formulations described for the wettable powders, either by a wet route (contacting finely divided active ingredient with the inert filler and a little water, e.g. 1 to 20% by weight, or with an aqueous solution of a dispersing agent or binder, followed by drying and screening), or by a
15 dry route (compacting followed by grinding and screening).

The rates and concentrations of the formulated compositions may vary according to the method of application or the nature of the compositions or use thereof. Generally speaking, the compositions for application to control arthropod or helminth pests usually contain from about 0.00001% to about 95%, more particularly from about
20 0.0005% to about 50% by weight of one or more compounds of the invention, or of total active ingredients (that is to say the compounds of the invention, together with other substances toxic to arthropods or helminths, synergists, trace elements or stabilizers). The actual compositions employed and their rate of application will be selected to achieve the desired effect(s) by the farmer, livestock producer, medical
25 or veterinary practitioner, pest control operator or other person skilled in the art.

Solid or liquid compositions for application topically to animals, timber, stored products or household goods usually contain from about 0.00005% to about 90%, more particularly from about 0.001% to about 10%, by weight of one or more compounds of the invention. For administration to animals orally or parenterally,
30 including percutaneously solid or liquid compositions, these normally contain from about 0.1% to about 90% by weight of one or more compounds of the invention. Medicated feedstuffs normally contain from about 0.001% to about 3% by weight of

- one or more compounds of the invention. Concentrates or supplements for mixing with feedstuffs normally contain from about 5% to about 90%, preferably from about 5% to about 50%, by weight of one or more compounds of the invention. Mineral salt licks normally contain from about 0.1% to about 10% by weight of one or more compounds of formula (I) or pesticidally acceptable salts thereof.
- Dusts or liquid compositions for application to livestock, goods, premises or outdoor areas may contain from about 0.0001% to about 15%, more especially from about 0.005% to about 2.0%, by weight, of one or more compounds of the invention. Suitable concentrations in treated waters are between about 0.0001 ppm and about 20 ppm, more particularly about 0.001 ppm to about 5.0 ppm, of one or more compounds of the invention, and may be used therapeutically in fish farming with appropriate exposure times. Edible baits may contain from about 0.01% to about 5%, preferably from about 0.01% to about 1.0%, by weight, of one or more compounds of the invention.
- When administered to vertebrates parenterally, orally or by percutaneous or other means, the dosage of compounds of the invention, will depend upon the species, age, or health of the vertebrate and upon the nature and degree of its actual or potential infestation by arthropod or helminth pests. A single dose of about 0.1 to about 100 mg, preferably about 2.0 to about 20.0 mg, per kg body weight of the animal or doses of about 0.01 to about 20.0 mg, preferably about 0.1 to about 5.0 mg, per kg body weight of the animal per day, for sustained medication, are generally suitable by oral or parenteral administration. By use of sustained release formulations or devices, the daily doses required over a period of months may be combined and administered to animals on a single occasion.
- The following composition EXAMPLES 2A - 2M illustrate compositions for use against arthropods, especially insects or acarids, or helminths such as plant nematodes, which comprise, as active ingredient, compounds of the invention, such as those described in preparative examples. The compositions described in EXAMPLES 2A - 2M can each be diluted to give a sprayable composition at concentrations suitable for use in the field. Generic chemical descriptions of the ingredients (for which all of the following percentages are in weight percent), used in the composition EXAMPLES 2A - 2M exemplified below, are as follows:

	Trade Name	Chemical Description
	Ethylan BCP	Nonylphenol ethylene oxide condensate
	Soprophor BSU	Tristyrylphenol ethylene oxide condensate
	Arylan CA	A 70% w/v solution of calcium dodecylbenzenesulfonate
5	Solvesso 150	Light C ₁₀ aromatic solvent
	Arylan S	Sodium dodecylbenzenesulfonate
	Darvan NO ₂	Sodium lignosulphonate
	Celite PF	Synthetic magnesium silicate carrier
	Sopropon T36	Sodium salts of polycarboxylic acids
10	Rhodigel 23	Polysaccharide xanthan gum
	Bentone 38	Organic derivative of magnesium montmorillonite
	Aerosil	Microfine silicon dioxide

EXAMPLE 2A

- 15 A water soluble concentrate is prepared with the composition as follows:

Active ingredient	7%
Ethylan BCP	10%
N-methylpyrrolidone	83%

To a solution of Ethylan BCP dissolved in a portion of N-methylpyrrolidone is added the active ingredient with heating and stirring until dissolved. The resulting solution is made up to volume with the remainder of the solvent.

20 EXAMPLE 2B

An emulsifiable concentrate (EC) is prepared with the composition as follows:

	Active ingredient	25%(max)
	Soprophor BSU	10%
	Arylan CA	5%
25	N-methylpyrrolidone	50%
	Solvesso 150	10%

The first three components are dissolved in N-methylpyrrolidone and to this is then added the Solvesso 150 to give the final volume.

EXAMPLE 2C

A wettable powder (WP) is prepared with the composition as follows:

Active ingredient	40%
Arylan S	2%
Darvan NO ₂	5%
Celite PF	53%

The ingredients are mixed and ground in a hammer-mill to a powder with a particle size of less than 50 microns.

5

EXAMPLE 2D

An aqueous-flowable formulation is prepared with the composition as follows:

Active ingredient	40.00%
Ethylan BCP	1.00%
Sopropon T360.	0.20%
Ethylene glycol	5.00%
Rhodigel 230.	0.15%
Water	53.65%

The ingredients are intimately mixed and are ground in a bead mill until a mean particle size of less than 3 microns is obtained.

10

EXAMPLE 2E

An emulsifiable suspension concentrate is prepared with the composition as follows:

Active ingredient	30.0%
Ethylan BCP	10.0%
Bentone 38	0.5%
Solvesso 150	59.5%

The ingredients are intimately mixed and ground in a beadmill until a mean particle size of less than 3 microns is obtained.

15

EXAMPLE 2F

A water dispersible granule is prepared with the composition as follows:

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Active ingredient	30%
Darvan No 2	15%
Arylan S	8%
Celite PF	47%

The ingredients are mixed, micronized in a fluid-energy mill and then granulated in a rotating pelletizer by spraying with water (up to 10%). The resulting granules are dried in a fluid-bed drier to remove excess water.

5 EXAMPLE 2G

A dusting powder is prepared with the composition as follows:

Active ingredient	1 to 10%
Talc powder-superfine	99 to 90%

The ingredients are intimately mixed and further ground as necessary to achieve a fine powder. This powder may be applied to a locus of arthropod infestation, for example refuse dumps, stored products or household goods or animals infested by, or at risk of infestation by, arthropods to control the arthropods by oral ingestion. Suitable means for distributing the dusting powder to the locus of arthropod infestation include mechanical blowers, handshakers or livestock self treatment devices.

15 EXAMPLE 2H

An edible bait is prepared with the composition as follows:

Active ingredient	0.1 to 1.0%
Wheat flour	80%
Molasses	19.9 to 19%

The ingredients are intimately mixed and formed as required into a bait form. This edible bait may be distributed at a locus, for example domestic or industrial premises, e.g. kitchens, hospitals or stores, or outdoor areas, infested by arthropods, for example ants, locusts, cockroaches or flies, to control the arthropods by oral ingestion.

EXAMPLE 2I

A solution formulation is prepared with a composition as follows:

Active ingredient	15%
Dimethyl sulfoxide	85%

The active ingredient is dissolved in dimethyl sulfoxide with mixing and or heating as required. This solution may be applied percutaneously as a pour-on application to domestic animals infested by arthropods or, after sterilization by filtration through a polytetrafluoroethylene membrane (0.22 micrometer pore size), by parenteral injection, at a rate of application of from 1.2 to 12 ml of solution per 100 kg of animal body weight.

10 EXAMPLE 2J

A wettable powder is prepared with the composition as follows:

Active ingredient	50%
Ethylan BCP	5%
Aerosil	5%
Celite PF	40%

The Ethylan BCP is absorbed onto the Aerosil which is then mixed with the other ingredients and ground in a hammer-mill to give a wettable powder, which may be diluted with water to a concentration of from 0.001% to 2% by weight of the active compound and applied to a locus of infestation by arthropods, for example, dipterous larvae or plant nematodes, by spraying, or to domestic animals infested by, or at risk of infection by arthropods, by spraying or dipping, or by oral administration in drinking water, to control the arthropods.

20 EXAMPLE 2K

A slow release bolus composition is formed from granules containing the following components in varying percentages(similar to those described for the previous compositions) depending upon need:

Active ingredient
 Density agent
 Slow-release agent
 Binder

- The intimately mixed ingredients are formed into granules which are compressed into a bolus with a specific gravity of 2 or more. This can be administered orally to ruminant domestic animals for retention within the reticulo-rumen to give a continual slow release of active compound over an extended period of time to control
- 5 infestation of the ruminant domestic animals by arthropods.

EXAMPLE 2L

A slow release composition in the form of granules, pellets, brickettes or the like can be prepared with compositions as follows:

Active ingredient 0.5 to 25%
 Polyvinyl chloride 75 to 99.5%
 Dioctyl phthalate (plasticizer)

- 10 The components are blended and then formed into suitable shapes by melt-extrusion or molding. These composition are useful, for example, for addition to standing water or for fabrication into collars or eartags for attachment to domestic animals to control pests by slow release.

15 EXAMPLE 2M

A water dispersible granule is prepared with the composition as follows:

Active ingredient	85%(max)
Polyvinylpyrrolidone	5%
Attapulgate clay	6%
Sodium lauryl sulfate	2%
Glycerine	2%

The ingredients are mixed as a 45% slurry with water and wet milled to a particle size of 4 microns, then spray-dried to remove water.

METHODS OF PESTICIDAL USE

The following representative test procedures, using compounds of the invention, were conducted to determine the parasiticial and pesticidal activity of compounds of the invention.

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METHOD A:

Germinated field bean seeds (*Vicia faba*) with seed roots were transferred into brown glass bottles filled with tap water and then populated with about 100 black bean aphids (*Aphis fabae*). Plants and aphids were then dipped into an aqueous solution of the formulated preparation to be examined for 5 seconds. After they had drained, plants and animals were stored in a climatized chamber (16 hours of light/day, 25°C, 40-60% relative atmospheric humidity). After 3 and 6 days of storage, the effect of the preparation on the aphids was determined. At a concentration of 100 ppm (based on the content of active compound), the following Compounds caused a mortality of at least 50% among the aphids:

A-18, A-64, A-65, A-71, A-74, A-79, A-81, A-86, A-88, A-206, A-209, A-223, A-255, A-261, A-262, A-265, A-267, A-268, A-292, A-296, A-312, A-312, A-316, A-317, A-326, A-329, A-349, A-353, A-354, A-355, A-365, A-366, A-367, A-369, A-373, A-381, A-398, A-431, A-524, A-529, A-540, A-544, A-564, A-605, A-626, A-691, A-697, A-713, A-736, A-737, A-738, A-744, A-745, A-747, A-748, A-798, A-799, A-805, A-822, A-861, A-862, A-865, A-867, A-874, B-37, B-40, B-47, B-65, B-74, B-149, B-150, B-151, B-152, B-155, B-158, B-163, B-166, B-167, B-168, B-169, B-170, B-176, B-184, B-185, B-189, B-247, B-251, B-255, B-258, B-259, B-261, B-267, B-269, B-296, B-313, B-349, B-353, B-354, B-355, B-366, B-369, B-373, B-398, B-431, B-564, B-713, B-736, B-737, B-738, B-744, B-745, B-747, B-748, B-799, B-805, B-822, B-861, B-863, B-864, B-865, B-867, B-869, B-870, B-871, B-873, B-874, B-877, C-85, E-85, F-85, F-88, H-85, S-548, S-550, S-551, S-552, S-553, S-555, S-556, S-558, S-559, U-3, U-7, U-20, X-45 and X-55.

30 METHOD B:

Germinated field bean seeds (*Vicia faba*) with seed roots were transferred into brown glass bottles filled with tap water. Four milliliters of an aqueous solution of the

formulated preparation to be examined were pipetted into the brown glass bottle.

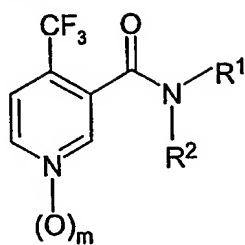
The field bean was then heavily populated with about 100 black bean aphids (*Aphis fabae*). Plants and aphids were then stored in a climatized chamber (16 hours of light/day, 25°C, 40-60% relative atmospheric humidity). After 3 and 6 days of

5 storage, the root-systemic effect of the preparation on the aphids was determined. At a concentration of 10 ppm (based on the content of active compound), the following Compounds caused a mortality of at least 80% among the aphids, by root-systemic action:

10 A-39, A-64, A-65, A-67, A-71, A-74, A-79, A-81, A-86, A-88, A-89, A-90, A-209, A-212, A-223, A-262, A-265, A-267, A-268, A-292, A-296, A-313, A-317, A-326, A-329, A-349, A-354, A-355, A-365, A-366, A-367, A-369, A-373, A-381, A-398, A-431, A-519, A-524, A-529, A-540, A-544, A-564, A-605, A-626, A-691, A-697, A-713, A-736, A-737, A-738, A-744, A-745, A-747, A-748, A-798, A-799, A-805, A-822, A-861, A-862, A-865, A-867, A-871, A-873, A-874, B-37, B-40, B-47, B-65, B-71, B-74, B-86,
15 B-149, B-150, B-151, B-152, B-155, B-158, B-166, B-167, B-169, B-170, B-176, B-184, B-189, B-247, B-251, B-255, B-257, B-258, B-259, B-261, B-267, B-269, B-296, B-313, B-349, B-353, B-354, B-355, B-366, B-369, B-373, B-398, B-564, B-713, B-736, B-737, B-738, B-744, B-745, B-748, B-799, B-805, B-861, B-863, B-864, B-865, B-867, B-869, B-870, B-871, B-872, B-873, B-874, B-877, C-85, D-86, E-85, F-85, F-
20 88, G-85, H-85, S-3, S-120, S-356, S-548, S-550, S-551, S-553, S-556, S-557, S-558, S-559, U-3, U-7, U-20, X-45 and X-55.

CLAIMS

1. A compound of the formula (I):



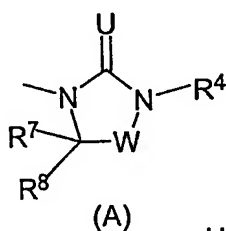
(I)

wherein:

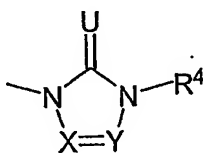
R^1 is $-C(=U)NR^3R^4$ or $-C(=V)OR^{3a}$;

R^2 is H, (C_1-C_6) alkyl or R^3 ;

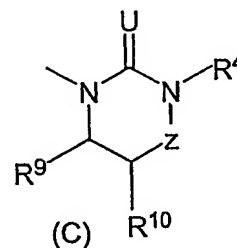
- 10 R^3 is R^5 , OH or NH_2 ; or is (C_1-C_6) alkyl substituted by one or more R^6 groups; or R^2 and R^3 together with the interconnecting atoms form a heterocyclic ring selected from (A), (B), (C), (D) and (E);



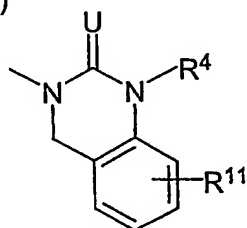
(A)



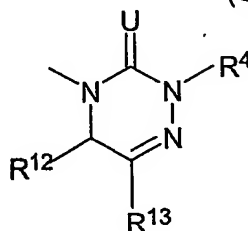
(B)



(C)



(D)



(E)

- 15 R^{3a} is (C_3-C_8) cycloalkyl or (C_3-C_8) cycloalkyl- (C_1-C_6) alkyl, which cycloalkyl groups are unsubstituted or substituted by one or more (C_1-C_6) alkyl, (C_1-C_6) haloalkyl or R^6 groups; or is (C_1-C_6) alkyl, (C_3-C_6) alkenyl or (C_3-C_6) alkynyl which last three mentioned groups are substituted by one or more R^6 groups; or is (C_1-C_6) alkylamino;

or is $\text{NH}(\text{CHR}^{14})_s\text{aryl}$ which aryl group is unsubstituted or substituted by one or more R^6 groups;

R^4 is H or R^5 ; or is $(\text{C}_1\text{-C}_6)\text{alkyl}$ unsubstituted or substituted by one or more R^6 groups;

- 5 or R^3 and R^4 together with the adjacent N atom form a 3 to 8-membered unsaturated, partially saturated or saturated heterocyclic ring which optionally contains up to three additional N, O or S atoms and which ring is unsubstituted or substituted by one or more R^6 or R^{14a} groups;

- R^5 is $(\text{C}_3\text{-C}_6)\text{alkenyl}$, $(\text{C}_3\text{-C}_6)\text{alkynyl}$, $(\text{C}_3\text{-C}_8)\text{cycloalkyl}$, $(\text{C}_1\text{-C}_6)\text{alkoxy}$,
 10 $(\text{C}_3\text{-C}_6)\text{alkenyloxy}$, $(\text{C}_3\text{-C}_6)\text{alkynyloxy}$, $(\text{C}_1\text{-C}_6)\text{alkylamino}$, di- $(\text{C}_1\text{-C}_6)\text{alkylamino}$,
 $\text{CO}(\text{C}_1\text{-C}_6)\text{alkyl}$, $\text{NHCO}(\text{C}_1\text{-C}_6)\text{alkyl}$, $\text{NHSO}_2(\text{C}_1\text{-C}_6)\text{alkyl}$ or $\text{SO}_2(\text{C}_1\text{-C}_6)\text{alkyl}$ which last
 12 mentioned groups are unsubstituted or substituted by one or more R^6 groups; or
 is $(\text{C}_3\text{-C}_8)\text{cycloalkyl}-(\text{C}_1\text{-C}_6)\text{alkyl}$ which cycloalkyl group is unsubstituted or
 substituted by one or more R^6 groups; or is $\text{NH}(\text{CHR}^{14})_s\text{aryl}$, $-(\text{CR}^{15}\text{R}^{16})_p\text{aryl}$,
 15 $\text{O}(\text{R}^{15}\text{R}^{16})_r\text{aryl}$, NHCOaryl , $\text{CO}(\text{CH}_2)_t\text{aryl}$, NHSO_2aryl , $\text{SO}_2(\text{CH}_2)_u\text{aryl}$ or $\text{N}=\text{C}(\text{aryl})_2$,
 $-(\text{CR}^{15}\text{R}^{16})_p\text{heterocyclyl}$ or $\text{O}(\text{R}^{15}\text{R}^{16})_r\text{heterocyclyl}$, which last ten mentioned aryl or
 heterocyclyl groups are unsubstituted or substituted by one or more R^{17} groups; or is
 $\text{O}(\text{CR}^{15}\text{R}^{16})_p(\text{C}_3\text{-C}_8)\text{cycloalkyl}$ or $\text{N}=\text{C}[(\text{C}_1\text{-C}_6)\text{alkyl}]_2$;

- R^6 is halogen, $(\text{C}_1\text{-C}_6)\text{alkoxy}$, $(\text{C}_1\text{-C}_6)\text{haloalkoxy}$, $\text{S}(\text{O})_n\text{R}^{14a}$, CN, $\text{CO}_2(\text{C}_1\text{-C}_6)\text{alkyl}$,
 20 CO_2H , NO_2 , OH, amino, $(\text{C}_1\text{-C}_6)\text{alkylamino}$, di- $(\text{C}_1\text{-C}_6)\text{alkylamino}$, carbamoyl,
 $(\text{C}_1\text{-C}_6)\text{-alkylcarbamoyl}$, di- $(\text{C}_1\text{-C}_6)\text{-alkylcarbamoyl}$ or $\text{CH}[\text{O}(\text{C}_1\text{-C}_6)\text{alkyl}]_2$; or is
 phenoxy unsubstituted or substituted by one or more R^{14a} or halogen groups;

R^{17} is R^6 , R^{14a} or CH_2OH ;

U is S, O or NR^{18} ;

- 25 V is O or S;

W is $(\text{CHR}^{19})_q$, CO or NR^{20} ;

X is CR^{21} or N;

Y is CR^{22} or N;

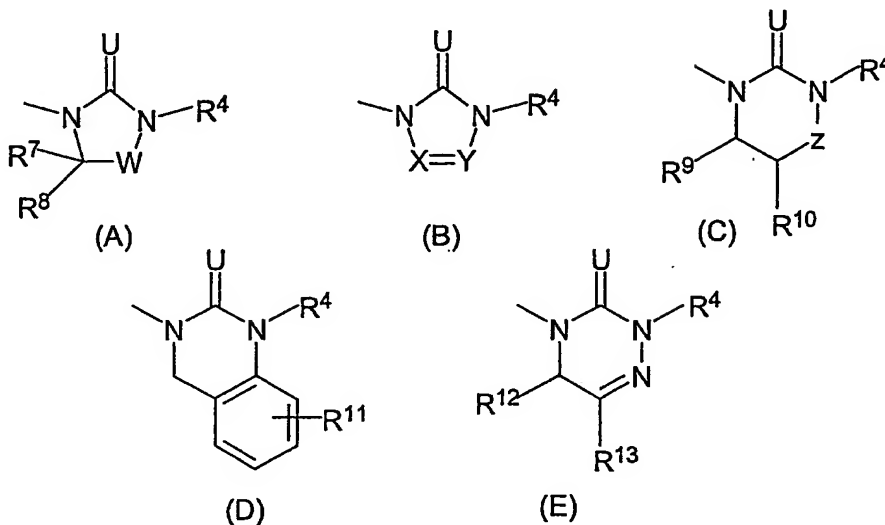
Z is O, CO or NR^{23} ;

- 30 R^7 , R^8 , R^9 , R^{12} , R^{19} , R^{21} and R^{22} are each independently H; or $(\text{C}_1\text{-C}_6)\text{alkyl}$,
 $(\text{C}_2\text{-C}_6)\text{alkenyl}$, $(\text{C}_2\text{-C}_6)\text{alkynyl}$, $(\text{C}_3\text{-C}_8)\text{cycloalkyl}$, $(\text{C}_1\text{-C}_6)\text{alkoxy}$, $(\text{C}_2\text{-C}_6)\text{alkenyloxy}$ or
 $(\text{C}_2\text{-C}_6)\text{alkynyloxy}$, which last seven mentioned groups are unsubstituted or

- substituted by one or more R^6 groups; or is $-(CH_2)_p$ aryl or heterocyclyl, which aryl or heterocyclyl groups are unsubstituted or substituted by one or more R^6 groups; or (C_3-C_8) cycloalkyl- (C_1-C_6) alkyl which cycloalkyl group is unsubstituted or substituted by one or more R^6 groups;
- 5 or R^7 and R^8 together with the attached carbon atom may represent $C=O$;
 R^{10} , R^{20} and R^{23} are each independently H; or (C_1-C_6) alkyl, (C_3-C_6) alkenyl, (C_3-C_6) alkynyl or (C_3-C_8) cycloalkyl, which last four mentioned groups are unsubstituted or substituted by one or more R^6 groups; or is (C_3-C_8) cycloalkyl- (C_1-C_6) alkyl which cycloalkyl group is unsubstituted or substituted by one or more R^6 groups; or is
- 10 $-(CH_2)_p$ aryl or heterocyclyl which aryl or heterocyclyl groups are unsubstituted or substituted by one or more R^6 groups;
 R^{11} is R^7 , halogen, CN, $CO_2(C_1-C_6)$ alkyl, NO_2 or $S(O)_nR^{14}$; or is (C_1-C_6) alkylamino or di- (C_1-C_6) alkylamino, which groups are unsubstituted or substituted by one or more R^6 groups;
- 15 R^{13} is R^7 or OH;
 R^{14} , R^{15} and R^{16} are each independently H, (C_1-C_6) alkyl or (C_1-C_6) haloalkyl;
 R^{14a} is (C_1-C_6) alkyl or (C_1-C_6) haloalkyl;
 R^{18} is R^7 or OH; or is (C_1-C_6) alkylamino or di- (C_1-C_6) alkylamino, which groups are unsubstituted or substituted by one or more R^6 groups;
- 20 m is zero or one;
n, p, r, s, t and u are each independently zero, one or two;
q is one, two or three; and each heterocyclyl in the above mentioned radicals is independently a heterocyclic radical having 3 to 7 ring atoms and 1 to 4 hetero atoms selected from N, O and S;
- 25 or a pesticidally acceptable salt thereof;
with the exclusion of the compound wherein R^1 is $-C(=U)NR^3R^4$; U is O; R^2 is H; m is zero; R^4 is H and R^3 is 2,4-dichlorophenyl.

2. A compound according to claim 1 wherein:
- 30 R^1 is $-C(=U)NR^3R^4$ or $-C(=V)OR^{3a}$;
 R^2 is H, (C_1-C_6) alkyl or R^3 ;
 R^3 is R^5 , OH or NH_2 ; or is (C_1-C_6) alkyl substituted by one or more R^6 groups;

or R^2 and R^3 together with the interconnecting atoms form a heterocyclic ring selected from (A), (B), (C), (D) and (E);



- R^{3a} is (C₃-C₈)cycloalkyl or (C₃-C₈)cycloalkyl-(C₁-C₆)alkyl, which cycloalkyl groups are
- 5 unsubstituted or substituted by one or more R^6 groups; or is (C₁-C₆)alkyl, (C₃-C₆)alkenyl or (C₃-C₆)alkynyl which last three mentioned groups are substituted by one or more R^6 groups; or is (C₁-C₆)alkylamino; or is $NH(CHR^{14})_s$ aryl which aryl group is unsubstituted or substituted by one or more R^6 groups;
- R^4 is H or R^5 ; or is (C₁-C₆)alkyl unsubstituted or substituted by one or more R^6
- 10 groups;
- or R^3 and R^4 together with the adjacent N atom form a 3 to 8-membered unsaturated, partially saturated or saturated heterocyclic ring which optionally contains up to three additional N, O or S atoms and which ring is unsubstituted or substituted by one or more R^6 or R^{14a} groups;
- 15 R^5 is (C₃-C₆)alkenyl, (C₃-C₆)alkynyl, (C₃-C₈)cycloalkyl, (C₁-C₆)alkoxy, (C₃-C₆)alkenyloxy, (C₃-C₆)alkynyloxy, (C₁-C₆)alkylamino, di-(C₁-C₆)alkylamino, CO(C₁-C₆)alkyl, NHCO(C₁-C₆)alkyl, NHSO₂(C₁-C₆)alkyl or SO₂(C₁-C₆)alkyl which last 12 mentioned groups are unsubstituted or substituted by one or more R^6 groups; or is (C₃-C₈)cycloalkyl-(C₁-C₆)alkyl which cycloalkyl group is unsubstituted or
- 20 substituted by one or more R^6 groups; or is $NH(CHR^{14})_s$ aryl, $-(CR^{15}R^{16})_p$ aryl, $O(R^{15}R^{16})_r$ aryl, $NHCO$ aryl, $CO(CH_2)_u$ aryl, $NHSO_2$ aryl, $SO_2(CH_2)_u$ aryl or $N=C(aryl)_2$, $-(CR^{15}R^{16})_p$ heterocyclyl or $O(R^{15}R^{16})_r$ heterocyclyl, which last ten mentioned aryl or

heterocyclyl groups are unsubstituted or substituted by one or more R^{17} groups; or is $O(CR^{15}R^{16})_p(C_3-C_8)$ cycloalkyl or $N=C[(C_1-C_6)alkyl]_2$;

R^6 is halogen, $(C_1-C_6)alkoxy$, $(C_1-C_6)haloalkoxy$, $S(O)_nR^{14a}$, CN, $CO_2(C_1-C_6)alkyl$, CO_2H , NO_2 , OH, amino, $(C_1-C_6)alkylamino$, di- $(C_1-C_6)alkylamino$, carbamoyl, $(C_1-$

5 $C_6)$ -alkylcarbamoyl, di- (C_1-C_6) -alkylcarbamoyl or $CH[O(C_1-C_6)alkyl]_2$; or is phenoxy unsubstituted or substituted by one or more R^{14a} or halogen groups;

R^{17} is R^6 , R^{14a} or CH_2OH ;

U is S, O or NR^{18} ;

V is O or S;

10 W is $(CHR^{19})_q$, CO or NR^{20} ;

X is CR^{21} or N;

Y is CR^{22} or N;

Z is O, CO or NR^{23} ;

R^7 , R^8 , R^9 , R^{12} , R^{19} , R^{21} and R^{22} are each independently H; or $(C_1-C_6)alkyl$, $(C_2-$

15 $C_6)alkenyl$, $(C_2-C_6)alkynyl$, $(C_3-C_8)cycloalkyl$, $(C_1-C_6)alkoxy$, $(C_2-C_6)alkenyloxy$ or $(C_2-C_6)alkynyloxy$, which last seven mentioned groups are unsubstituted or substituted by one or more R^6 groups; or is $-(CH_2)_p$ aryl or heterocyclyl, which aryl or heterocyclyl

groups are unsubstituted or substituted by one or more R^6 groups; or $(C_3-C_8)cycloalkyl-(C_1-C_6)alkyl$ which cycloalkyl group is unsubstituted or substituted by

20 one or more R^6 groups;

or R^7 and R^8 together with the attached carbon atom may represent $C=O$;

R^{10} , R^{20} and R^{23} are each independently H; or $(C_1-C_6)alkyl$, $(C_3-C_6)alkenyl$, $(C_3-C_6)alkynyl$ or $(C_3-C_8)cycloalkyl$, which last four mentioned groups are unsubstituted or substituted by one or more R^6 groups; or is $(C_3-C_8)cycloalkyl-(C_1-C_6)alkyl$ which

25 cycloalkyl group is unsubstituted or substituted by one or more R^6 groups; or is

$-(CH_2)_p$ aryl or heterocyclyl which aryl or heterocyclyl groups are unsubstituted or substituted by one or more R^6 groups;

R^{11} is R^7 , halogen, CN, $CO_2(C_1-C_6)alkyl$, NO_2 or $S(O)_nR^{14}$; or is $(C_1-C_6)alkylamino$ or di- $(C_1-C_6)alkylamino$, which groups are unsubstituted or substituted by one or more

30 R^6 groups;

R^{13} is R^7 or OH;

R^{14} , R^{15} and R^{16} are each independently H, $(C_1-C_6)alkyl$ or $(C_1-C_6)haloalkyl$;

R^{14a} is (C_1-C_6) alkyl or (C_1-C_6) haloalkyl;

R^{18} is R^7 or OH; or is (C_1-C_6) alkylamino or di- (C_1-C_6) alkylamino, which groups are unsubstituted or substituted by one or more R^6 groups;

m is zero or one;

5 n, p, r, s, t and u are each independently zero, one or two;

q is one, two or three; and each heterocyclyl in the above mentioned radicals is independently a heterocyclic radical having 3 to 7 ring atoms and 1 to 4 hetero atoms selected from N, O and S;

or a pesticidally acceptable salt thereof;

10 with the exclusion of the compound wherein R^1 is $-C(=U)NR^3R^4$; U is O; R^2 is H; m is zero; R^4 is H and R^3 is 2,4-dichlorophenyl.

3. A compound or a salt thereof as claimed in claim 1 or 2, wherein R^1 is $-C(=U)NR^3R^4$.

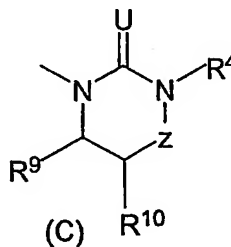
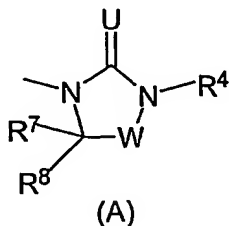
15

4. A compound or a salt thereof as claimed in claim 1, 2 or 3, wherein R^2 is H or R^3 .

5. A compound or a salt thereof as claimed in any one of claims 1 to 4, wherein

20 R^3 is R^5 or OH; or is (C_1-C_6) alkyl substituted by one or more R^6 groups;

or R^2 and R^3 together with the interconnecting atoms form a heterocyclic ring selected from (A) and (C):



25 6. A compound or a salt thereof as claimed in any one of claims 1 to 5, wherein R^4 is H or R^5 , or is (C_1-C_6) alkyl unsubstituted or substituted by one or more R^6 groups;

or R³ and R⁴ together with the adjacent N atom may form a 3 to 8-membered unsaturated, partially saturated or saturated heterocyclic ring which optionally contains up to three additional N, O or S atoms and which ring is unsubstituted or substituted by one or more R⁶ or R^{14a} groups.

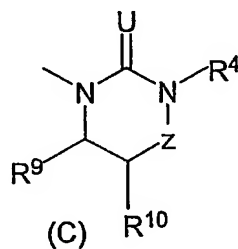
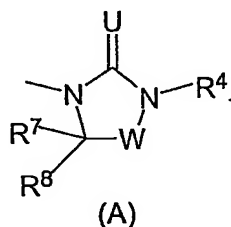
5

7. A compound or a salt thereof as claimed in any one of claims 1 to 6, wherein R¹ is $-\text{C}(=\text{U})\text{NR}^3\text{R}^4$;

R² is H;

R³ is R⁵ or OH; or is (C₁-C₆)alkyl substituted by one or more R⁶ groups;

10 or R² and R³ together with the interconnecting atoms may form a heterocyclic ring selected from (A) and (C):



R⁴ is H or R⁵, or is (C₁-C₆)alkyl unsubstituted or substituted by one or more R⁶

15 groups;

or R³ and R⁴ together with the adjacent N atom may form a pyrrolidin-1-yl, piperidin-1-yl, morpholin-1-yl or thiomorpholin-1-yl (or its S-oxide or S, S-dioxide) ring;

R⁵ is (C₃-C₆)alkenyl, (C₃-C₆)alkynyl, (C₃-C₈)cycloalkyl, (C₃-C₈)cycloalkyl-(C₁-C₆)alkyl, (C₁-C₆)alkoxy, (C₃-C₆)alkenyloxy, (C₃-C₆)alkynyloxy or O(CR¹⁵R¹⁶)_p(C₃-C₈)cycloalkyl;

20 or -(CR¹⁵R¹⁶)_pphenyl, -(CR¹⁵R¹⁶)_pheterocyclyl, O(CR¹⁵R¹⁶)_rphenyl or O(CR¹⁵R¹⁶)_rheterocyclyl, which last four mentioned phenyl or heterocyclyl groups are unsubstituted or substituted by one or more R¹⁷ groups;

R⁶ is halogen, (C₁-C₆)alkoxy, (C₁-C₆)haloalkoxy, S(O)_nR^{14a}, CN, NO₂ or OH;

R¹⁷ is R⁶, R^{14a} or CH₂OH;

25 U is S or O;

W is (CHR¹⁹)_q or CO;

Z is O;

R^7 , R^8 , R^9 , R^{10} and R^{19} are each H; or (C₁-C₆)alkyl unsubstituted or substituted by one or more R^6 groups;

or R^7 and R^8 together with the attached carbon atom represent C=O;

R^{14} , R^{15} and R^{16} are each H or (C₁-C₆)alkyl;

5 R^{14a} is (C₁-C₆)alkyl or (C₁-C₆)haloalkyl;

m is zero;

n, r, s, t and u are zero, one or two;

q is one; and wherein heterocyclyl denotes a pyridine, pyrimidine, (1,2,4)-oxadiazole, (1,3,4)-oxadiazole, (1,2,4)-thiadiazole, (1,3,4)-thiadiazole, pyrrole, furan, thiophene,

10 oxazole, thiazole, benzothiazole, imidazole, pyrazole, isoxazole, 1,2,4-triazole, tetrazole, pyrazine, pyridazine, oxazoline, thiazoline, tetrahydrofuran, tetrahydropyran, morpholine, piperidine, piperazine, pyrroline, pyrrolidine, oxazolidine, thiazolidine, oxirane or oxetane radical.

15 8. A compound or a salt thereof as claimed in claim 1, wherein R^1 is

-C(=U)NR³R⁴;

R^2 is H;

U is O or S;

R^3 is (C₁-C₆)alkoxy, (C₁-C₆)haloalkoxy, (C₃-C₆)alkenyloxy, (C₃-C₆)alkynyloxy,

20 CH₂phenyl or OCH₂phenyl, phenyl or 2-pyridyl which last four mentioned phenyl or pyridyl groups are unsubstituted or substituted by one or more groups selected from halogen, (C₁-C₆)alkyl, (C₁-C₆)alkoxy, CN and NO₂;

R^4 is H, (C₁-C₆)alkyl, (C₃-C₆)alkenyl, (C₃-C₆)alkynyl or CH₂phenyl; and

m is zero.

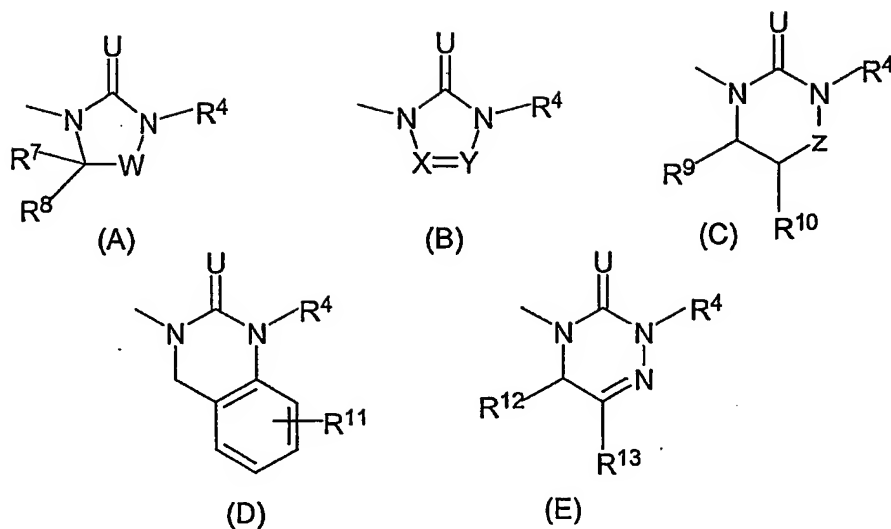
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9. A process for the preparation of a compound of formula (I) or a salt thereof as defined in any one of claims 1 to 8, which process comprises:

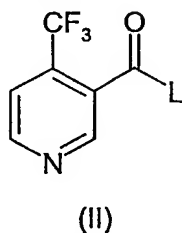
a) where R^1 is -C(=U)NR³R⁴, m is zero, and R^2 , U, R^3 and R^4 are as defined in formula (I); or R^2 and R^3 together with the interconnecting atoms form a heterocyclic

30 ring selected from (A), (B), (C), (D) and (E);

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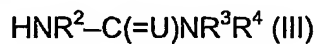


wherein R⁴, R⁷, R⁸, R⁹, R¹⁰, R¹¹, R¹², R¹³, W, X, Y and Z are as defined in formula (I),
the reaction of a compound of formula (II):



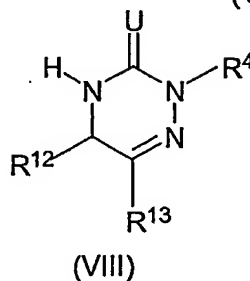
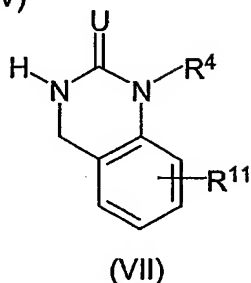
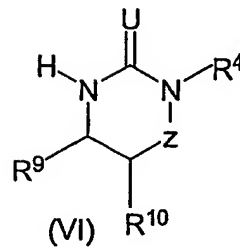
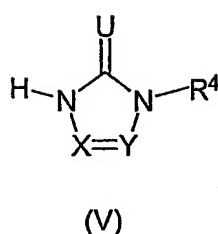
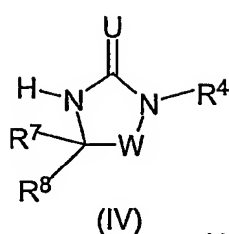
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wherein L is a leaving group, with a compound of formula (III):



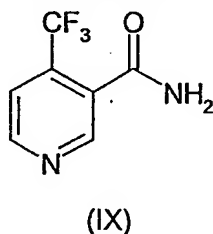
wherein R², U, R³ and R⁴ are as defined in formula (I), or with a compound of formula (IV), (V), (VI); (VII) or (VIII):

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wherein R^4 , R^7 , R^8 , R^9 , R^{10} , R^{11} , R^{12} , R^{13} , W , X , Y and Z are as defined in formula (I);
or

- b) where R^1 is $-C(=U)NR^3R^4$, m is zero, R^2 is H , U is O , and R^3 and R^4 are as defined in formula (I), the reaction of a compound of formula (IX):



with oxalyl chloride or triphosgene, to give the corresponding acylisocyanate intermediate followed by reaction with an amine of formula (X):



wherein R^3 and R^4 are as defined in formula (I); or

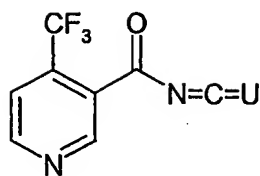
- c) where R^1 is $-C(=V)OR^{3a}$, m is zero, R^2 is H , V is O , and R^{3a} is as defined in formula (I), the reaction of a compound of formula (IX) above, with oxalyl chloride to give an acylisocyanate intermediate, followed by reaction with an alcohol of formula
- 15 (XI):



wherein R^3 is as defined in formula (I); or

- d) where R^1 is $-C(=U)NR^3R^4$, m is zero, R^2 is H , U is O or S , and R^3 and R^4 are as defined in formula (I), the reaction of a compound of formula (XII).

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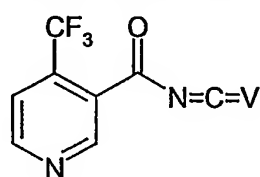


(XII)

wherein U is O or S, with a compound of formula (X) as defined in formula (I); or

e) where R^1 is $-C(=V)OR^{3a}$, m is zero, R^2 is H, V is O or S, and R^{3a} is as defined

5 in formula (I), the reaction of a compound of formula (XIII).



(XIII)

wherein V is O or S, with a compound of formula (XI) as defined above; or

f) where R^1 is $-C(=U)NR^3R^4$, m is zero, R^2 is H, R^4 is H, U is O or S, and R^3 is as

10 defined in formula (I), the reaction of a compound of formula (IX) as defined in formula (I), with a strong base, followed by reaction with a compound of formula (XIV):



wherein R^3 is as defined in formula (I); or

15 g) where R^1 is $-C(=U)NR^3R^4$ or $-C(=V)OR^{3a}$, m is zero, R^2 is H, U and V are each S, and R^3 , R^{3a} and R^4 are as defined in formula (I), the 1-pot reaction of 4-trifluoromethylnicotinic acid with a halogenating agent to give the corresponding acid chloride, followed by reaction with an alkali metal thiocyanate or ammonium thiocyanate or a tetraalkylammonium thiocyanate to give the 4-trifluoromethyl-3-pyridylcarbonyl isothiocyanate, followed by reaction with an amine of formula (X) above or an alcohol of formula (XI) above; or

h) where R^1 and R^2 are as defined above, and m is 1 the oxidation of a corresponding compound in which m is 0; and

if desired, converting a resulting compound of formula (I) into a pesticidally

25 acceptable salt thereof.

10. A pesticidal composition comprising a compound of formula (I) or a pesticidally acceptable salt thereof as defined in any one of claims 1 to 8, in association with a pesticidally acceptable diluent or carrier and/or surface active agent.

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11. The use of compounds of the formula (I) or their salts as claimed in any of claims 1 to 8 as pesticides.

INTERNATIONAL SEARCH REPORT

International Application No

PCT/EP 03/04714

A. CLASSIFICATION OF SUBJECT MATTER

IPC 7 C07D213/82 C07D401/06 C07D413/06 A01N43/40 A01N43/50
A01N43/54 A01N43/653 A01N43/713 A01N43/88

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 C07D A01N

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, WPI Data, PAJ, BEILSTEIN Data

C. DOCUMENTS CONSIDERED TO BE RELEVANT

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X	EP 0 580 374 A (ISHIHARA SANGYO KAISHA LTD.) 26 January 1994 (1994-01-26) cited in the application Table 1, compounds 9, 17, 34, 49, 106, 110, claims	1-10
X	DATABASE WPI Week 0214 Derwent Publications Ltd., London, GB; AN 106161 XP002215212 & WO 01 90075 A (ISHIHARA SANGYO KAISHA LTD.), 29 November 2001 (2001-11-29) abstract	1-10
A	DE 100 14 006 A (AVENTIS CROPS SCIENCE) 27 September 2001 (2001-09-27) claims; examples	1-10
-/-		

☒ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

* Special categories of cited documents:

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O document referring to an oral disclosure, use, exhibition or other means

P document published prior to the international filing date but later than the priority date claimed

T later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

X document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

Y document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

Z document member of the same patent family

Date of the actual completion of the international search

11 September 2003

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19/09/2003

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INTERNATIONAL SEARCH REPORT

International Application No

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C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

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A	DE 199 58 166 A (BAYER AG) 14 December 2000 (2000-12-14) claims; examples	1-10

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